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Welcome home.

Danville Community College

Who do you want to be tomorrow?
Who do you want to be tomorrow?

Danville Community College is a two-year institution of higher education under the state-wide Virginia Community College System. DCC’s service area includes the City of Danville, Pittsylvania County, and Halifax County. The college, its employees, and students are governed by the policies established by the State Board for Community Colleges and with the support and advice of the Danville Community College Board.

Mission: Danville Community College is committed to providing quality comprehensive higher education and workforce programs and services to promote student success and to enhance business and community development.

Vision: DCC will be the college of choice in our region for exemplary educational programs and services.

NOTE: The printed catalog is provided as a guide and may not be a comprehensive and accurate listing of all available programs, course sequences, requirements, etc. after printing. Please check www.danville.edu/catalog for the most up-to-date information.

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Welcome to Danville Community College. For more than 50 years, we have been transforming the lives of our students and the communities we serve by providing a high-quality, affordable education. I am grateful and elated to begin this journey with you as your President. As we enter this new phase of your life, I encourage each of you to embrace a growth mindset. I believe every person on this campus should always be growing and learning. Despite obstacles that may arise, we must always believe in our ability to rise above challenges and come out stronger on the other end.

I am so delighted that you are part of our amazing learning community. I welcome and value your positive energy and dedication to excellence in education. We are a thoughtful and caring community of educators who share the common goals of nurturing, exposing, and challenging students through the promotion of high-level learning. These goals support our mission to provide quality comprehensive higher education and workforce programs and services that promote student success and enhance business and community development.

Danville Community College is leading the charge in Danville and the surrounding region to provide a skilled workforce for manufacturing and defense industries throughout Virginia in our state-of-the-art welding and precision machining programs. Additionally, we are committed to diversity and inclusion, by providing programming and services to students with disabilities, military veterans, foster care children, GED students, working adults, and high school students. So find your place to believe and belong at DCC.

I’m so happy to be here, and if you’re looking for an engaging, enlightening and life-changing experience, I think you’ll be happy here, too. Now is the perfect time to become a DCC Knight, and together we can build a brighter future. Welcome to DCC where we are UKnighted!!!

Welcome.

Jacqueline Gill Powell, EdD
President
## Curricula and Programs of Study

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
<th>Dean/AVP</th>
<th>Lead Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Administration of Justice</strong></td>
<td>124</td>
<td>Dr. Paul Fox</td>
<td>Ms. Vickie Taylor</td>
</tr>
<tr>
<td>(A.A.S.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Law Enforcement Specialization</td>
<td>124</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td><strong>Administrative Support Technology</strong></td>
<td>79</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>(A.A.S.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• General Office Specialization</td>
<td>79</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>• Medical Office Administration Specialization</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Medical Office Coding Specialization</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Advanced Database Development</strong></td>
<td>107</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Advanced Early Childhood Development</strong></td>
<td>130</td>
<td>Dr. Paul Fox</td>
<td>Mrs. Traci Daniel</td>
</tr>
<tr>
<td><strong>Air Conditioning &amp; Refrigeration</strong></td>
<td>157</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Mark Bryant, Mr. Elliot Baynes</td>
</tr>
<tr>
<td>(D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Air Conditioning &amp; Refrigeration Servicing</strong></td>
<td>158</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Mark Bryant, Mr. Elliot Baynes</td>
</tr>
<tr>
<td>(C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Automotive Analysis &amp; Repair</strong></td>
<td>159</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Bill Roche, Mr. Ed Anthony</td>
</tr>
<tr>
<td>(D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Automotive Analysis &amp; Repair Fundamentals</strong></td>
<td>161</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Bill Roche, Mr. Ed Anthony</td>
</tr>
<tr>
<td><strong>Basic Dental Assisting</strong></td>
<td>136</td>
<td>Dr. Paul Fox</td>
<td>Ms. Robin Mitchell</td>
</tr>
<tr>
<td><strong>Basic Welding</strong></td>
<td>172</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Herb Hardy, Mr. John Keatts</td>
</tr>
<tr>
<td><strong>Business Administration</strong></td>
<td>92</td>
<td>Dr. Paul Fox</td>
<td>Mr. Matt Nidiffer</td>
</tr>
<tr>
<td>(A.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Business Management</strong></td>
<td>71</td>
<td>Dr. Paul Fox</td>
<td>Mr. Bill Roche, Ms. Linda Wilborne, Mr. Matt Nidiffer</td>
</tr>
<tr>
<td>(A.A.S.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Automotive Management Specialization</td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Graphic Imaging Management Specialization</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Management Specialization</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Project Management Specialization</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNC Field Service Technician</strong></td>
<td>51</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jeremiah Williams, Mr. Jeremiah Williams</td>
</tr>
<tr>
<td>- Electrical&lt;sup&gt;1&lt;/sup&gt; (CSC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNC Flow Cell Machining&lt;sup&gt;2&lt;/sup&gt; (CSC)</strong></td>
<td>52</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jeremiah Williams, Ms. Sheila Wright</td>
</tr>
<tr>
<td><strong>Commercial Art</strong></td>
<td>67</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td><strong>Cosmetology</strong></td>
<td>162</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jermon Russell</td>
</tr>
<tr>
<td><strong>Cyber Security</strong></td>
<td>105</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Cyber Security Technician</strong></td>
<td>106</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Cybercrime Investigation</strong></td>
<td>126</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Cybersecurity and Networking Foundations</strong></td>
<td>111</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Dental Hygiene</strong></td>
<td>139</td>
<td>Dr. Paul Fox</td>
<td>Ms. Robin Mitchell</td>
</tr>
<tr>
<td><strong>Desktop Applications</strong></td>
<td>108</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td><strong>Digital Art &amp; Design</strong></td>
<td>68</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td><strong>Digital Drawing &amp; Illustration</strong></td>
<td>69</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Digital Imaging &amp; Photography</strong></td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensional Inspection</strong></td>
<td>53</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td><strong>Early Childhood Development</strong></td>
<td>131</td>
<td>Dr. Paul Fox</td>
<td>Ms. Traci Daniel</td>
</tr>
<tr>
<td><strong>Early Childhood Education</strong></td>
<td>132</td>
<td>Dr. Paul Fox</td>
<td>Ms. Traci Daniel</td>
</tr>
<tr>
<td><strong>Electrical Concepts</strong></td>
<td>163</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soysars</td>
</tr>
<tr>
<td><strong>Electrical/Electronics Engineering Technology</strong></td>
<td>164</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soysars</td>
</tr>
<tr>
<td>(D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical/Electronics Equipment Servicing</strong></td>
<td>166</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soysars</td>
</tr>
<tr>
<td>(D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electronic Concepts</strong></td>
<td>163</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soysars</td>
</tr>
<tr>
<td><strong>Emergency Medical Services</strong></td>
<td>137</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jimmie Tickle</td>
</tr>
<tr>
<td><strong>Engineering (AS)</strong></td>
<td>153</td>
<td>Dr. Paul Fox</td>
<td>Dr. Neil Sallah</td>
</tr>
</tbody>
</table>

*Pending approval   1Capstone program
<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Page</th>
<th>Dean/AVP</th>
<th>Lead Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations of Criminal Justice* (C)</td>
<td>127</td>
<td>Dr. Paul Fox</td>
<td>Ms. Vickie Taylor</td>
</tr>
<tr>
<td>General Education (C)</td>
<td>73</td>
<td>Dr. Paul Fox</td>
<td>Mr. Dee Drinkard</td>
</tr>
<tr>
<td>General Office Studies (CSC)</td>
<td>83</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>Graphic Communications (CSC)</td>
<td>70</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td>Graphic Imaging Technology (D)</td>
<td>71</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td>Health Science (A.A.S.)</td>
<td>127</td>
<td>Dr. Paul Fox</td>
<td></td>
</tr>
<tr>
<td>• Practical Nursing Specialization</td>
<td>142</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Cathy Barrett</td>
</tr>
<tr>
<td>Industrial Electrical Principles (C)</td>
<td>168</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soyars</td>
</tr>
<tr>
<td>Industrial Electronic Principles (C)</td>
<td>168</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soyars</td>
</tr>
<tr>
<td>Information Systems Data Analyst (CSC)</td>
<td>108</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Information Systems Management (CSC)</td>
<td>109</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Information Systems Technician (CSC)</td>
<td>109</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Information Systems Technology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cyber and Network Security Specialization</td>
<td>111</td>
<td>Mr. Steve Carrigan</td>
<td></td>
</tr>
<tr>
<td>Information Systems Technology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Gaming &amp; Mobile Application Design</td>
<td>118</td>
<td>Mr. Steve Carrigan</td>
<td></td>
</tr>
<tr>
<td>• Software Development Specialization</td>
<td>119</td>
<td>Mr. Steve Carrigan</td>
<td></td>
</tr>
<tr>
<td>Information Technology Support Specialist (CSC)</td>
<td>110</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Law Enforcement (C)</td>
<td>128</td>
<td>Dr. Paul Fox</td>
<td>Dr. Ted Maier</td>
</tr>
<tr>
<td>Liberal Arts (AA&amp;S)</td>
<td>74</td>
<td>Dr. Paul Fox</td>
<td>Ms. Sherry Gott</td>
</tr>
<tr>
<td>• Humanities Specialization</td>
<td>75</td>
<td>Mr. Steve Carrigan</td>
<td>Ms. Vickie Taylor</td>
</tr>
<tr>
<td>• Social Science Specialization</td>
<td>76</td>
<td>Dr. Paul Fox</td>
<td>Ms. Vickie Taylor</td>
</tr>
<tr>
<td>Logistics Management (CSC)</td>
<td>96</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Kevin Poole</td>
</tr>
<tr>
<td>Machining Skills (CSC)</td>
<td>54</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Todd Sanders, Mr. Josh McDowell, Mr. Joseph Distad</td>
</tr>
<tr>
<td>Maintenance Mechanics (C)</td>
<td>55</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker, Mr. William Soyars</td>
</tr>
<tr>
<td>Manufacturing Technician (CSC)</td>
<td>56</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Teresa Hawker</td>
</tr>
<tr>
<td>Marketing (A.A.S.)</td>
<td>97</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>• Electronic Commerce Specialization</td>
<td>97</td>
<td>Dr. Paul Fox</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>• Marketing Specialization</td>
<td>99</td>
<td>Mr. Steve Carrigan</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>• Warehousing and Distribution Specialization</td>
<td>100</td>
<td>Dr. Paul Fox</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>Medical Coding (CSC)</td>
<td>84</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>Medical Medical Laboratory Technology (A.A.S.)</td>
<td>144</td>
<td>Dr. Paul Fox</td>
<td>Dr. Paul Fox</td>
</tr>
<tr>
<td>Medical Office Studies (CSC)</td>
<td>85</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>Mobile Application Development (CSC)</td>
<td>120</td>
<td>Dr. Paul Fox</td>
<td>Ms. Cassandra Satterfield</td>
</tr>
<tr>
<td>Network Technology (CSC)</td>
<td>115</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Network Virtualization Technologies (CSC)</td>
<td>116</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Networking Technology Fundamentals (CSC)</td>
<td>116</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Networking with CISCO(CCNA) (CSC)</td>
<td>117</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Nurse Aide Extended Care (CSC)</td>
<td>137</td>
<td>Dr. Paul Fox</td>
<td>Ms. Rosa Wilson</td>
</tr>
<tr>
<td>Nursing (A.A.S.)</td>
<td>146</td>
<td>Dr. Paul Fox</td>
<td>Ms. Cathy Barrett</td>
</tr>
<tr>
<td>Office Information Processing (C)</td>
<td>86</td>
<td>Dr. Paul Fox</td>
<td>Ms. Richie Robertson</td>
</tr>
<tr>
<td>Pharmacy Technician (CSC)</td>
<td>138</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jimmie Tickle</td>
</tr>
<tr>
<td>Phlebotomy (CSC)</td>
<td>139</td>
<td>Dr. Paul Fox</td>
<td>Ms. Cathy Barrett</td>
</tr>
<tr>
<td>Pre-Allied Health Nurse Aide* (CSC)</td>
<td>135</td>
<td>Dr. Paul Fox</td>
<td>Ms. Cathy Barrett Printing</td>
</tr>
<tr>
<td>Precision Machining Technology (D)</td>
<td>57</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Kevin Poole, Mr. Todd Sanders, Mr. Josh McDowell,</td>
</tr>
</tbody>
</table>

*Pending approval  †Capstone program
<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Page</th>
<th>Dean/AVP</th>
<th>Lead Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing Technology (CSC)</td>
<td>72</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Joseph Distad</td>
</tr>
<tr>
<td>Project Management (CSC)</td>
<td>91</td>
<td>Dr. Paul Fox</td>
<td>Ms. Sheila Wright</td>
</tr>
<tr>
<td>Quality Control (CSC)*</td>
<td>64</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>Respiratory Therapy (A.A.S.)</td>
<td>150</td>
<td>Dr. Paul Fox</td>
<td>Mr. Josh Worthley</td>
</tr>
<tr>
<td>Science (A.A.S)</td>
<td>154</td>
<td>Dr. Paul Fox</td>
<td>Dr. Paul Fox</td>
</tr>
<tr>
<td>• Computer Science Specialization</td>
<td>104</td>
<td>Dr. Paul Fox</td>
<td>Dr. David Balfour</td>
</tr>
<tr>
<td>Small Business Management (CSC)</td>
<td>93</td>
<td>Dr. Paul Fox</td>
<td>Mr. Constantine Terzopoulos</td>
</tr>
<tr>
<td>Small Unmanned Aircraft Systems (SUAS) (CSC)</td>
<td>103</td>
<td>Dr. Paul Fox</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>Software Development (CSC)</td>
<td>121</td>
<td>Dr. Paul Fox</td>
<td>Mr. Steve Carrigan</td>
</tr>
<tr>
<td>Technical Studies Automation and Robotics (A.A.S.)</td>
<td>60</td>
<td>Mr. Jimmie Tickle</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>Technical Studies Electrical Utilities</td>
<td></td>
<td></td>
<td>Mr. Vincent Kendrick</td>
</tr>
<tr>
<td>and Substation Technician* (A.A.S.)</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Studies Industrial Technician -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical (A.A.S.)</td>
<td>61</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. James Sawyers,</td>
</tr>
<tr>
<td>Technical Studies Industrial Technician -</td>
<td></td>
<td></td>
<td>Ms. Teresa Hawker</td>
</tr>
<tr>
<td>Mechanical (A.A.S.)</td>
<td>62</td>
<td>Mr. Jimmie Tickle</td>
<td></td>
</tr>
<tr>
<td>Technical Studies Integrated Machining</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology (A.A.S.)</td>
<td>63</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Jeremiah Williams,</td>
</tr>
<tr>
<td>Technical Studies Venture Creation &amp; Management (a.k.a. “Build Your Business”) (A.A.S.)</td>
<td>95</td>
<td>Dr. Paul Fox</td>
<td>Mr. Timothy Robertson</td>
</tr>
<tr>
<td>Website Design (CSC)</td>
<td>122</td>
<td>Dr. Paul Fox</td>
<td>Dr. Willie Sherman</td>
</tr>
<tr>
<td>Website Programming (CSC)</td>
<td>122</td>
<td>Dr. Paul Fox</td>
<td>Ms. Linda Wilborne</td>
</tr>
<tr>
<td>Welding (D)</td>
<td>172</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. Herb Hardy,</td>
</tr>
<tr>
<td>Welding Technology (C)</td>
<td>174</td>
<td>Mr. Jimmie Tickle</td>
<td>Mr. John Keatts,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Herb Hardy,</td>
</tr>
</tbody>
</table>
2020-2021 Academic Calendar

All students are expected to finalize tuition payment, including financial aid, with the appropriate DCC office prior to attending any class(es).

Failure to pay for classes, including with financial aid, can result in classes being removed from the student’s schedule.

FALL 2020
Advising by Appointment and Registration for Fall Semester ......................................................... April 1-August 14
Final Week for Fall 2020 Registration .......................................................................................... August 17-21
Last Day to Add a New Class(es) .......................................................................................... August 21
Payment of Tuition* ................................................................................................................. June 1-August 21
Faculty Planning and Preparation Days .................................................................................. August 17-21
Classes Begin .......................................................................................................................... August 24
Swaps/Drops Only (Swaps cannot be processed without the approval of the instructor) ......................................................... August 24-28
Holiday No Classes (Labor Day) ...................................................................................... September 7
Last Day to Withdraw With Full Tuition Refund** ................................................................. September 9
No Classes - Faculty Planning and Preparation Day .............................................................. October 9-20
Mid-term Grades Posted ........................................................................................................ October 19-23
Last Day to Withdraw Without Mitigating Circumstances ("W" Grade Issued)** ....................... October 29
Institutional Effectiveness Day .............................................................................................. November 5
Advising by Appointment and Registration for Spring Semester ............................................... November 2, 2020 and Jan. 4-8, 2021
No Classes - Faculty Research Day ......................................................................................... November 25
No Classes (Thanksgiving Holiday) ........................................................................................ College Closes at 12 noon on November 25; November 26-27
Fall Graduation Application Deadline (no exceptions) ............................................................. December 4
Classes End .......................................................................................................................... December 11
Final Exams .......................................................................................................................... December 14-18
Faculty Planning and Preparation Days .................................................................................. December 21-23
College Closed .................................................................................................................... December 24-31

SPRING 2021
Holiday College Closed ............................................................................................................. January 1
Advising by Appointment and Registration for Spring Semester .............................................. January 4-8
Final Week for Spring 2021 Registration ............................................................................... January 8
Last Day to Add a New Class(es) ............................................................................................. January 8
Payment of Tuition* ............................................................................................................... November 2, 2020 – January 8
Faculty Planning and Preparation Days ................................................................................ January 11
Classes Begin ........................................................................................................................ January 11
Swaps/Drops Only (Swaps cannot be processed without the approval of the instructor) ........ January 11-15
Holiday No Classes (Martin Luther King, Jr.) ........................................................................ January 18
Last Day to Withdraw With Full Tuition Refund** ................................................................. January 27
Spring Graduation Application Deadline (no exceptions) ....................................................... February 19
No Classes - Spring Break ...................................................................................................... March 8-12
Mid-term Grades Posted ....................................................................................................... March 19; 22-25
Last Day to Withdraw Without Mitigating Circumstances ("W" Grade Issued)** ...................... March 26
Advising by Appointment and Registration for Summer Session ..................................... April 1-until Summer Semester Classes Begin
Advising by Appointment and Registration for Fall Session .............................................. April 1-until Fall Semester Classes Begin
Institutional Effectiveness Day ............................................................................................. April 14
Classes End .......................................................................................................................... May 3
Exams ..................................................................................................................................... May 4-7; 10
Faculty Planning and Preparation Days ................................................................................ May 7-10
Graduation ................................................................................................................................ Saturday, May 15
SUMMER SESSION 2021
Advising by Appointment/Registration for Fall Semester 2021... April 1, 2021 until Fall Semester Classes Begin

FULL SESSION
Summer Graduation Application Deadline (no exceptions)................................., February 19
Advising by Appointment ..................................................................................... April 1-May 21
Registration and Payment of Tuition for Summer Session*.................................. April 1-May 21
Final Week for Registration ................................................................................... May 17-May 21
Last Day to Add Class(es) ................................................................................... May 21
Classes Begin......................................................................................................... May 24
Swaps/Drops Only+ - Swaps cannot be processed without the approval of the instructor ............................................................. May 24-25
Holiday No Classes (Memorial Day)...................................................................... May 31
Last Day to Withdraw Without Mitigating Circumstances (“W” Grade Issued)** .............................................................. June 2
Last Day to Withdraw With Full Tuition Refund** .................................................. June 27
Classes End.......................................................................................................... June 28

FIRST SESSION
Summer Graduation Application Deadline (no exceptions)................................., February 19
Advising by Appointment ..................................................................................... April 1-May 21
Registration and Payment of Tuition for Summer Session*.................................. April 1-May 21
Final Week for Registration ................................................................................... May 17-May 21
Last Day to Add Class(es) ................................................................................... May 21
Classes Begin......................................................................................................... May 24
Swaps/Drops Only+ - Swaps cannot be processed without the approval of the instructor ............................................................. May 24-25
Holiday No Classes (Memorial Day)...................................................................... May 31
Last Day to Withdraw Without Mitigating Circumstances (“W” Grade Issued)** .............................................................. June 13
Classes End.......................................................................................................... June 28

SECOND SESSION
Summer Graduation Application Deadline (no exceptions)................................., February 19
Advising by Appointment ..................................................................................... April 1-June 28
Registration and Payment of Tuition for Summer Session*.................................. April 1-June 28
Final Week for Registration ................................................................................... June 22-25; 28
Last Day to Add Class(es) ................................................................................... June 28
Classes Begin......................................................................................................... June 29
Swaps/Drops Only+ - Swaps cannot be processed without the approval of the instructor ............................................................. June 29-30
Independence Day - No Classes............................................................................. July 3
Last Day to Withdraw With Full Tuition Refund** .................................................. July 6
Last Day to Withdraw Without Mitigating Circumstances (“W” Grade Issued)** .............................................................. July 19
Classes End.......................................................................................................... Aug 2

*Payment of Tuition: (A) Early registration: Students are expected to have all payment arrangements, including financial aid, finalized at least 30 calendar days prior to the first day of classes.

(B) Standard registration: Students registering within 30 days of the first day of classes are expected to have all payment arrangements finalized, including financial aid, within seven calendar days of registration.

All students are expected to finalize tuition payment, including financial aid, with the appropriate DCC office prior to attending any class(es). Failure to pay for classes, including with financial aid, can result in classes being removed from the student's schedule.

**Other classes that are not regular 16 week classes will have different dates for full tuition refund and last day to withdraw. Check the instructor's course outline for the course.
General Information
Danville Community College is a two-year institution of higher education under the statewide Virginia Community College System. DCC’s service area includes the City of Danville, Pittsylvania County, and Halifax County. The college, its employees, and students are governed by the policies established by the State Board for Community Colleges with the support and advice of the Danville Community College Board.

DCC promotes and maintains educational and employment opportunities without regard to race, color, sex, ethnicity, religion, gender, age (except when age is a bona fide occupational qualification), disability, national origin, or other non-merit factors. DCC prohibits sexual harassment, including sexual violence. Inquiries related to the college’s nondiscrimination policies should be directed to: Title IX Coordinator/Affirmative Action Officer, Danville Community College, 1008 S. Main St., Danville, VA 24541, 434.797.8524; toll free: 800.560.4291, ext. 288524, or 434.688.4764 (VP); or email titleix@danville.edu.

Danville Community College values the multi-cultural diversity of its students, faculty, and staff. We are committed to creating and nurturing a campus environment that both welcomes and empowers all individuals. We recognize cultural differences of background, experience, and national origin, and we seek to promote a genuine understanding and appreciation for these differences. We also seek to recognize and promote the common bonds of humanity, which cross the boundaries of cultural differences.

History
Danville Community College developed from two institutions. Danville Technical Institute opened in 1936 as Danville Textile School, becoming Danville Technical Institute in 1941. The Danville Division of Virginia Polytechnic Institute first began as an engineering division in 1946, and was later expanded to include the first two years of coursework for all engineering, business administration, liberal arts, and science majors. DCC was one of the original four colleges to join the Virginia Community College System in 1966.

Programs
DCC offers more than 100 programs in general education, college transfer, and career training, along with customized classes to meet the needs of business and industry. For more information on academic programs, see page 47. See page 50 for advanced manufacturing programs.

College Goals
1. Educational Programs: The college will provide quality credit and non-credit educational programs and instruction.
2. Faculty and Staff: The college will have an excellent and diverse faculty and staff.
3. Academic and Student Services: The college will provide quality services to assist students in achieving their academic and personal goals.
4. Educational Environment: The college will have facilities, equipment, and technology that enhance an effective learning environment.
5. Outreach Programs: The college will have a comprehensive outreach program.
6. Community Relations: The college will foster effective partnerships.
7. Resources: The college will obtain and use resources to achieve its mission and goals.

General Education Goals
Civic Engagement is the ability to contribute to the civic life and well-being of local, national, and global communities as both a social responsibility and a life-long learning process. Degree graduates will demonstrate the knowledge and civic values necessary to become informed and contributing participants in a democratic society.

Critical Thinking is the ability to use information, ideas and arguments from relevant perspectives to make sense of complex issues and solve problems. Degree graduates will
locate, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

**Professional Readiness** is the ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education.

**Quantitative Literacy** is the ability to perform accurate calculations, interpret quantitative information, apply and analyze relevant numerical data, and use results to support conclusions. Degree graduates will calculate, interpret, and use numerical and quantitative information in a variety of settings.

**Scientific Literacy** is the ability to apply the scientific method and related concepts and principles to make informed decisions and engage with issues related to the natural, physical, and social world. Degree graduates will recognize and know how to use the scientific method, and to evaluate empirical information.

**Written Communication** is the ability to develop, convey, and exchange ideas in writing, as appropriate to a given context and audience. Degree graduates will express themselves effectively in a variety of written forms.

*Approved October 30, 2018, by the DCC Curriculum Committee.*

**Educational Foundation**
The Danville Community College Educational Foundation is a tax-exempt, non-profit organization governed by a Board of Directors composed of concerned citizens, donors and alumni. The Foundation was established to enhance the academic excellence of Danville Community College and to improve the college’s ability to serve the citizens of our area in accordance with the college’s mission. Objectives of the Foundation include: Awarding student scholarships, providing professional development for faculty and staff, ensuring that instructional equipment keeps pace with technological changes, strengthening the academic programs, and encouraging cultural activities. For more information, visit danville.edu/foundation.

**Accreditation**
Danville Community College is one of 23 colleges in the Virginia Community College System. The associate degree curricula of the college have been approved by the State Council of Higher Education for Virginia. Danville Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033, telephone 404.679.4500 for questions about the accreditation of Danville Community College. (Note: The commission is to be contacted only if there is evidence that appears to support an institution’s significant non-compliance with a requirement or standard.)
DCC has an open admissions policy. Individuals are eligible for admission if they are high school graduates or the equivalent, or if they are 18 years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing and mathematics. However, students may be required to participate in developmental studies before beginning coursework in a particular field of study. Minimum scores are noted in the chart below:

<table>
<thead>
<tr>
<th></th>
<th>VPT</th>
<th>Compass</th>
<th>Asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>ENF 1</td>
<td>62</td>
<td>35</td>
</tr>
<tr>
<td>Writing</td>
<td>ENF 1</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Math</td>
<td>MTE 1</td>
<td>25</td>
<td>33</td>
</tr>
</tbody>
</table>

Exceptions to this policy may be made by the college president only for documented reasons.

Individuals may be admitted to DCC as curricular or non-curricular students.

Curricular Admission (students seeking to complete a program of study):
1. Apply online at www.danville.edu/BecomeAStudent. High school transcripts or equivalent may be required for admission to the college and certain programs. Home school graduates must provide a graduation date and may be required to provide documentation of coursework.
   *Virginia Residents: Please be sure to apply for in-state tuition rates on the application.
2. Demonstrate readiness for program placement.
   A. Take the Virginia Placement Test. Call 434.797.8460 or email admissions@danville.edu to make an appointment. Students are strongly encouraged to complete the online practice test at danville.edu/placementtesting.

Placement Testing Policy
Students who take the math and/or English Virginia Placement Test and do not enroll in developmental courses are allowed to take one retest within 12 months. Students who attempt a developmental course will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis in accordance with established college procedures.

B. Request a Placement Waiver.

In determining students’ readiness for college-level English and math courses, DCC will use the following means and measures. Transcripts and test scores should be sent to the Student Support Services Office for review.

- Any student who has earned an associate degree or higher, or who has earned a C or better in college-level courses in math and/or English at a regionally accredited institution, will be exempt from placement testing, provided they meet the prerequisites for the respective courses in their chosen program of study. Students must provide transcripts for approval.
- Any student who has successfully completed current developmental courses at a VCCS institution will be exempt from placement testing in those areas.
- Any student who has successfully completed developmental courses at a non-VCCS institution will have the coursework evaluated for placement. Students must provide transcripts for approval.
- Students enrolling in Career Studies Certificate programs may be waived from placement testing, unless a course in the program requires a reading, writing, or math prerequisite. Please contact the Admissions Office for more information regarding these programs.
- A recent (within past 5 years) high school or homeschool transcript may be submitted as high school/home school transcript or an approved test score for placement evaluation.
Math placement will be determined using one of the following measures.

<table>
<thead>
<tr>
<th>Math Placement Measures*</th>
<th>HSGPA or Score Range</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSGPA and Algebra II and One Algebra Intensive Course*</td>
<td>3.0 or higher</td>
<td>MTE 1-9 Satisfied</td>
</tr>
<tr>
<td>*Algebra Intensive Courses above Algebra II: Trigonometry, Math Analysis, Pre-Calculus, Calculus, Algebra III.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSGPA and Algebra II</td>
<td>3.0 or higher</td>
<td>MTE 1-5 Satisfied</td>
</tr>
<tr>
<td>HSGPA and Algebra I</td>
<td>3.0 or higher</td>
<td>MTE 1-3 Satisfied</td>
</tr>
<tr>
<td>SAT – Math</td>
<td>530 or above</td>
<td>MTE 1-9 Satisfied</td>
</tr>
<tr>
<td></td>
<td>510-520 range</td>
<td>MTE 1-5 Satisfied</td>
</tr>
<tr>
<td>ACT – Subject Area Test Math</td>
<td>22 or above</td>
<td>MTE 1-9 Satisfied</td>
</tr>
<tr>
<td></td>
<td>19-21 range</td>
<td>MTE 1-5 Satisfied</td>
</tr>
<tr>
<td>GED – Math</td>
<td>165 or above</td>
<td>MTE 1-5 Satisfied</td>
</tr>
<tr>
<td></td>
<td>155-164 range</td>
<td>MTE 1-3 Satisfied</td>
</tr>
</tbody>
</table>

# = Students may complete the VPT – Calculus for placement into Pre-Calculus II, Calculus, and 200-level Statistics. Placement directly into Pre-Calculus II, Calculus, and 200-level Statistics based on HSGPA and highest level courses taken will be at the discretion of the college.

English placement will be determined using one of the following measures.

<table>
<thead>
<tr>
<th>English Placement Measures</th>
<th>HSGPA or Score Range</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSGPA</td>
<td>3.0 or higher</td>
<td>ENG 111</td>
</tr>
<tr>
<td></td>
<td>2.7-2.9</td>
<td>ENF3/ENG 111</td>
</tr>
<tr>
<td>SAT-ERW (Evidence-Based Reading and Writing)</td>
<td>480 or above</td>
<td>ENG 111</td>
</tr>
<tr>
<td></td>
<td>460-470 range</td>
<td>ENF3/ENG 111</td>
</tr>
<tr>
<td>ACT-Subject Area Tests English and Reading</td>
<td>18 or above</td>
<td>ENG 111</td>
</tr>
<tr>
<td></td>
<td>15-17 range</td>
<td>ENF3/ENG 111</td>
</tr>
<tr>
<td>GED-English</td>
<td>165 or above</td>
<td>ENG 111</td>
</tr>
</tbody>
</table>

High school GPA (HSGPA) is valid for five (5) years after the date of high school graduation. SAT, ACT and GED Test scores are valid for five (5) years after the date of the test. Virginia Placement Test-English and Math scores are valid for five (5) years after the date of the test. Previously taken developmental courses will be valid for five (5) years after term taken.

**Multiple Measures 2.0 for Adult Learners**
Students who meet the following criteria may not have to take the Virginia Placement Test. Please speak to an academic advisor or counselor.
- High school graduate and been a graduate for at least five years or
- Active military personnel or veteran; or
Students participating in Multiple Measures 2.0 and enrolling in college-level courses without taking the placement test agree to participate in supportive learning assistance if or when they receive a grade below 80% on any major assignment in their class(es) during their first semester. Participation in this program includes the understanding that if the student does not participate in supportive learning assistance, as defined below, and does not earn a final course grade of “C” or better, the student will need to take the college placement test and will be placed in the mathematics or English course designated by the placement test. The placement test will need to be taken before registering for courses requiring prerequisites for the next semester.

3. Attend DCC ROCKS (New Student Orientation)
DCC ROCKS (Registration, Orientation, Computer Knowledge and Support) sessions are mandatory for new students prior to the start of classes. After applying and demonstrating readiness for program placement, the student should sign up for a DCC ROCKS session at www.danville.edu/DCCROCKS. This is a great opportunity to meet students, faculty and staff, and take care of the following all in one day:

• Meet with your academic advisor and create your course schedule
• Learn how to use myDCC
• Take a tour of campus
• Obtain a DCC Student ID card and parking permit

Admissions to Specific Curricula
In addition to the general admission requirements above, specific requirements are listed for each program of the college where applicable. Among items generally considered in determining students’ eligibility for admission to a curriculum are their educational/occupational experiences and other reasonable standards to ensure that they can successfully complete the program requirements. Students who do not meet the requirements for a specific program or course may improve chances of eligibility by completing developmental courses.

Non-Curricular Admission (non-program-placed students)
Examples include specialized workforce training through an employer, personal interest courses, or summer courses taken by a student at another institution. Any student wishing to take a single course at the college must satisfy all required pre-requisites.

1. For credit courses: Apply online at www.danville.edu/BecomeAStudent. *Virginia Residents: Please be sure to apply for in-state tuition rates on the application.

2. Acceptance by the college does not ensure admission to a specific curriculum or course. Non-curricular students must satisfy all required course prerequisites or placement testing requirements before enrolling in specific college-level courses.

3. Non-curricular students may meet with a DCC counselor to review course options.

Non-Credit Workforce Courses
See course schedule and register online at https://dcc.augusoft.net, or call Workforce Services at 434.797.6437.

Readmission
Former students who have not been enrolled for a period of three years or more must submit a new application: danville.edu/BecomeAStudent.

Auditing a Course
Students desiring to attend a course without taking the examination or receiving credit for the course may do so by registering to audit through the usual registration process and paying the normal tuition. Permission of the division dean or another appropriate academic administrator is required to audit a course. Audited courses carry no credit and do not count as part of the student’s course load. Students desiring to change status in a course from audit to credit or from credit to audit must do so within the add/drop period for the course. Students who desire to earn credit for a previously audited course must re-enroll in the course for credit and pay normal tuition to earn a grade other than “X.” Advanced standing credit should not be awarded for a previously audited course.

Dual Enrollment for High School Students
The major purpose of community colleges is to serve students who have graduated from high school or are beyond the compulsory age limit of the public school and have left public school. However, a qualified high school student may enroll at DCC, subject to the following conditions:

1. Dual Enrollment Partnerships
Dual enrollment partnerships are governed by an annually renewable contractual agreement between the school or district and DCC to allow academically qualified high school juniors and seniors to enroll in college courses that are applicable to degree, diploma, certificate, or career studies certificate programs offered at the college. Students from school divisions with whom the college has a current dual enrollment contractual agreement may enroll in college classes at DCC for dual enrollment credit. Courses taken for dual enrollment credit shall be transcripted on both the student’s college and high school transcripts.

2. High-School Based Dual Enrollment Programs and Courses
DCC and school divisions may develop contractual agreements to offer dual enrollment program pathways, academies, and courses at the high school. Such offerings may be taught by approved high school teachers who meet Virginia Community College System faculty credential...
requirements and are qualified by the college to teach course(s) in the program of study. DCC faculty and administrators are responsible for identifying high school dual enrollment program offerings; selecting and qualifying high school faculty to teach college courses; professional development of dual enrollment faculty; and oversight and evaluation of program standards, including assessment of student learning outcomes, program learning outcomes and instructional effectiveness.

3. Early College, Dual Enrollment Programs and Academies
DCC and school divisions may develop contractual agreements to offer dual enrollment program pathways and academies on the college campus. Such courses are taught by full-time or adjunct community college faculty.

4. Independent Dual Enrollment (Concurrent/Homeschooled Student Enrollment)
Independent dual enrollment allows individual high school students to enroll in courses at DCC. A qualified high school junior or senior may be admitted to any college-level credit-bearing course, with permission of the high school principal or designee and the parent. Participation in independent dual enrollment does not require a contractual agreement between the college and the school division. However, the high school student must meet dual enrollment admissions standards. Courses taken as independent dual enrollment shall be transcripted on the student’s college transcript.

Prior to admission, the college must receive a completed Concurrent Enrollment or Homeschooled Student Enrollment Form approved and signed by the student, the student’s parents and high school principal, and be approved by the DCC Admissions Committee. Students interested in independent dual enrollment should contact DCC Admissions.

Dual Enrollment Student Admissions
Although high school and home school students are not normally qualified for general admission, DCC may offer admission to those students who meet additional criteria. Dual enrollment is restricted to high school juniors and seniors and home school students studying at the high school junior or senior levels. Home school students must also provide a copy of a home school agreement approved by the school district or a letter from the local school board or a copy of the letter filed by the parent or legal guardian declaring home school. Documentation of parental permission is required for all dual enrollment students.

Because admitting freshmen and sophomores is considered exceptional, the college-ready status of each prospective freshman and sophomore student will be treated on a case-by-case basis. Formal approval by the college president is required for admitting freshmen or sophomores.
All students admitted under this section must demonstrate readiness for college by meeting the criteria below.

Students enrolling in a dual enrollment course must meet all course pre-requisites. DCC shall not enroll public or private high school students or homeschooled students in developmental courses.

<table>
<thead>
<tr>
<th>Admissions Criteria for Transfer Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Placement Test (VPT)</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>English/Writing</td>
</tr>
<tr>
<td>Reading</td>
</tr>
<tr>
<td>Writing/Reading</td>
</tr>
<tr>
<td>Mathematics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admissions Criteria for Career and Technical Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Placement Test (VPT)</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>English/Writing</td>
</tr>
<tr>
<td>Reading</td>
</tr>
<tr>
<td>Writing/Reading</td>
</tr>
<tr>
<td>Mathematics</td>
</tr>
</tbody>
</table>
Senior Citizens Admission
Students are classified as senior citizens if they are 60 years of age or older and enrolled in credit or non-credit courses without tuition charge under provisions of the Senior Citizen Higher Education Act of 1974, as amended. To enroll tuition-free in credit or non-credit courses on a space-available basis, students should meet the following criteria (not to exceed three courses per semester):

• Be 60 years of age or older prior to the semester of enrollment;
• Be a legal resident of Virginia;
• Have had a taxable income not exceeding $23,850 for income tax purposes for the year preceding enrollment (tax documents should be submitted for verification to the DCC Admissions Office);
• Must be admitted to the college as a student. Interested senior citizens should contact the DCC Admissions Office.

Interested senior citizens should contact the DCC Admissions Office. Any person meeting the above criteria will be admitted to a course only after all tuition-paying students have been accommodated.

Other Immigrant Status Admission
It is the policy of Danville Community College to admit those applicants who are immigrants residing in Virginia who have graduated from a Virginia high school with a high school diploma or equivalent, even if they are not able to document their legal presence. Those who are undocumented will pay tuition at the out-of-state rate. DCC will follow State Council for Higher Education for Virginia Domicile Guidelines for establishing domicile.

Domicile Requirements
The Virginia Community College System, including Danville Community College, is guided by the Code of Virginia and the regulations of the State Council of Higher Education on determining domicile. Each student applying for admission must complete a Domicile Determination Form in order to be declared legally domiciled in Virginia. Students must verify that one year before the date of entering the term for which they are requesting in-state tuition status, they have given up any previous domicile and were living in Virginia with the unqualified intention of remaining in Virginia. Please contact DCC Admissions for more information regarding residency requirements. It is the student’s responsibility to submit documentation and provide clear and convincing evidence regarding their domicile. In the event that a student’s circumstances change after a semester has begun, the student’s tuition status may be eligible for reclassification. This reclassification shall be effective for the next academic semester or term following the date of the application for reclassification. Students should follow DCC’s domicile appeal policy.

Domicile Appeals Process
A student who disagrees with an initial tuition classification may submit a Domicile Reclassification Form to the Domicile Appeals Committee within 10 calendar days of the initial notification. The committee will respond to the appeal within 15 calendar days. The Domicile Appeals Committee shall consist of two members of the Student Services Office. No person who serves at one level of this appeals process shall be eligible to serve at any other level of this review. If the student still disagrees with the tuition classification, he/she may file a final written appeal with the Vice President of Academic and Student Services. This written appeal must be made within five calendar days of the student’s notification of the first appeal. The Vice President will notify the student in writing of the final administrative decision within 30 calendar days of receipt of the appeal. A student who is not satisfied with the outcome of the review by the Vice President may appeal to the appropriate circuit court. The student must file a petition for review with the court within 30 calendar days of receipt of the decision by the Vice President of Academic and Student Services.

Policy Related to Legislation Regarding Admissions
Language on the admissions application informs applicants that their information is being transferred to the State Police. In the event that the State Police determine that a DCC applicant is listed on the Sex Offender Registry, the State Police will notify DCC. When the college receives such notification, the following procedures apply: 1. The applicant will be denied admission to DCC in accordance with its admission policy as published in this catalog. The decision is final and not subject to appeal. 2. If the applicant registers for classes and becomes a student before the college receives notification from the State Police that he/she is listed on the Sex Offender Registry, the student will immediately be informed that he/she is being administratively withdrawn from classes and will receive a tuition refund. An applicant, in this instance, may invoke his/her right to an appeal process.

Admission Denied / Revoked
The college reserves the right to evaluate and document special cases and to refuse or revoke admission if the college determines that the applicant or student poses a threat, is a potential danger, is significantly disruptive to the college community, or if such refusal or revocation is considered to be in the best interest of the college. DCC also reserves the right to refuse admission for applicants who have been expelled or suspended from, or determined to be a threat, potential danger or significantly disruptive by another college. The decision to refuse or deny admission is final and not subject to appeal. Students whose admission is revoked after enrollment will be given due process. Please see Appeal Process for Revoked Admissions.

Appeals Process for Revoked Admission
When a student’s admission is revoked, he/she may invoke the appeal process. Students who have registered for class but not yet started classes will be administratively withdrawn, and an appropriate service indicator will be placed on the student’s record, which will prevent the student from registering for classes. If the student is already
attending classes, the college will reserve class enrollment until the appeal process is complete, but the individual will not be allowed to attend class during the appeal process. The college will make every effort to expedite the appeals timeline.

1. The student will receive a certified letter/return receipt requested from the Dean of Student Support Services or designee notifying the student of the revoked admission and outlining the appeal process.
2. Student may write a letter of appeal to the Dean of Student Support Services in which he/she (1) provides justification for consideration of admission/ reinstatement and (2) discloses the nature of the offense and/or conviction serving as the basis for DCC’s action to revoke admission. If the student is a convicted sex offender, the letter should include a statement acknowledging his/her understanding that his/her identity and status as a convicted sex offender will be publicized on the college campus in accordance with federal and state law if he/she is admitted or reinstated.

The letter of appeal must be submitted to the Dean of Student Support Services within seven (7) business days of notification by the college.

3. A panel of five (5) full-time faculty or administrators will review the information submitted and make a decision by a simple majority vote within fourteen (14) business days of receiving the letter of appeal. The Dean of Student Support Services will serve as the convener of the panel and will be a member of the panel. Panel discussions will be confidential.

4. If the panel determines that the withdrawn student represents a threat or potential danger to the college and/or the revoked admission/ withdrawn enrollment is considered to be in the best interest of the college, the following apply:
   a. The student’s admission to the college will remain revoked
   b. The student will be administratively withdrawn from classes, if classes have been held
   c. An enrolled student will receive a tuition refund. Tuition refunds will not be granted for students removed from the college for disciplinary reasons.

5. The Dean of Student Support Services will inform the student by certified letter/return receipt requested of the decision of the appeals panel. The decision of the appeals panel shall be final.

Advanced Standing Credit
Advanced standing is the administrative placement of a student that awards credit for subject matter competency based upon previous academic study or occupational experience. This may include, but is not limited to, college
credit and advancement based upon individual college participation in the Advanced Placement Program (AP), International Baccalaureate Organization (IBO), or testing through the College Level Examination Program (CLEP) or the DSST Program (formerly known as DANTES); training provided by non-collegiate institutions, such as the armed forces; professional certification, or experiential learning/ work experience. For more information or for score requirements: danville.edu/advancedstanding

AP (Advanced Placement)
Many area high schools offer AP or honors courses to their students, giving them the opportunity to complete college-level work while attending high school. A minimum AP score of 3 is required for credit at DCC. An official copy of the AP transcript must be submitted to the DCC Admissions Office in order to obtain credit. Unofficial, student copies, or high school transcripts noting the AP credit will not be accepted for credit at DCC.

CLEP (College Level Examination Program)
CLEP is a national program of credit-by-examination that offers students the opportunity to obtain college credit for prior academic achievement. DCC accepts most of the CLEP-offered exams and uses the American Council on Education recommended minimum score of 50 for awarding CLEP credit. An official copy of the CLEP transcript must be submitted to the DCC Admissions Office in order to obtain credit. Unofficial or student copies of transcripts will not be accepted for credit. CLEP examinations are not offered through DCC.

IBO (International Baccalaureate)
Students who have completed the Standard Level certificate with a score of 5 to 7 in the International Baccalaureate program may be granted advanced standing credit for a variety of courses. Students requesting IB credit must have an official transcript sent from the IBO to the DCC Admissions Office in order to be considered for credit.

Police Academy Certificates
Per the Articulation Agreement between the VCCS and the Virginia Dept. of Criminal Justice Services, students who have satisfactorily documented successful completion of the VA State Police Academy or a Regional and Independent Certified Training Academy shall be awarded credit. Appropriate documentation is required and must be submitted to the Dean of Art, Sciences, & Business.

Credit for Military Training
A student’s military training, courses, and occupational specialty can all be considered for college credit. As a participating member of Service members Opportunity Colleges (SOC), DCC follows the American Council on Education’s (ACE) Guide to the Evaluation of Educational Experiences in the Armed Services in determining the value of learning acquired in military service when applicable to the service member’s program of study. Military service credit in the occupational/technical areas (i.e., Engineering, Health Technology) may require approval by the division dean prior to award. Credit may be granted for prior learning for non-collegiate education, training, and/or occupational experiences as recommended by college faculty, ACE, the National College Credit Recommendation Service, or another college-approved organization.

In addition to the above, DCC may award academic credit to any enrolled student who has successfully completed a military training course or program as part of the student’s military service that is applicable to the certificate or degree requirements and is: a) Recommended for academic credit by a national higher education association that provides academic credit recommendations for military training courses or programs; b) Noted on the student’s military transcript issued by any of the U.S. Armed Forces; or c) Otherwise documented in writing by any of the U.S. Armed Forces. In order to receive credit for military training, the student must submit a military transcript which includes the ACE recommended credit, and initiate a request for evaluation to the DCC Admissions Office. Note: If the student submits only the DD214 and no military transcript, only credit
for HLT/PED electives will be awarded. Students who have completed basic training, regardless of the date of military experience, may receive credit for HLT/PED electives. Each branch of the service has its own transcript request service.

Previous Completion Credit (Work Experience/Experiential Learning Credit) Students may be awarded college credit if they can demonstrate previous educational study or training/work experience that entitles them to credit for specific courses applicable to their program of study. Documentation for special training or experience must be submitted with the request for credit and will be retained in the student’s file. The supporting documentation must include samples of work or projects completed. Students wishing to be awarded previous completion credit for a specific course should contact the appropriate division office in which the course is taught. DCC reserves the right to place a time limit on prior learning experiences for which advanced standing may be granted. The division dean, in consultation with the admissions coordinator, will determine if courses taken more than five years previously can be used in the student’s current program of study.

Using Advanced Standing for Graduation Requirements

There is no limit to the number of credits that may be awarded through advanced standing credit, with the exception of portfolio-based credit for prior experiential learning. Credit for portfolio-based prior experiential learning may be awarded for no more than 25% of the credit hours required for a degree. In addition, credit achieved through advanced standing may not be used to fulfill the graduation residency requirement. A minimum of 25% of the credit required for graduation in the curriculum must be earned at DCC. All accepted advanced standing credits will be acknowledged and recorded on the student’s permanent record with the transferring agency or other source of credit identified. No unsuccessfully attempted advanced standing applications or examination results will be recorded on the student’s permanent record.

The following shall apply:
1. To earn credit for prior learning, student must be admitted to the curriculum in which advanced standing is requested.
2. Advanced standing will be awarded only for courses in which a student is not currently and has not been previously enrolled.

Course Acceptance Policy

1. The program administrator responsible for evaluating a student’s previous coursework shall:
   a. Determine the acceptability of each course the student wishes to transfer or apply toward the program requirements based upon his/her knowledge of any changes that have occurred since the course(s) was completed;
   b. Give particular attention to courses in areas that have had significant technological changes in recent years (e.g., electronics, automotive, graphic imaging, information systems, administrative support technology, etc.);
   c. As deemed appropriate, seek the input of faculty or other administrators regarding the proper course of action.

2. Courses which are determined to have outdated information and whose acceptance would not assure the student of having current skills may be used to meet elective credit requirements.

3. Students who have kept their educational training current through their job activities may have their coursework given special consideration for acceptance.

4. A student who wishes to challenge the non-acceptance of his/her coursework may do so by demonstrating his/her competencies in an appropriate manner to the administrator or appropriate faculty member.

5. Because of the diversity of courses offered and the differences in changes that occur over a given time, no specific time frame can be established for courses whose content may have become obsolete. However, it is recommended that all courses taken more than five years ago be carefully reviewed for their current relevance.

6. The decision to accept/not accept a course(s) should be made with the idea that a student’s graduation indicates current and relevant competencies in the program of studies.
Registration

Registration is held prior to the beginning of each semester or term. Specific registration dates are listed in the college’s academic calendar in this catalog and on danville.edu. Students must be registered for classes before the first day the class begins. Once classes start, students who need to drop/add classes may do so during the Swaps and Drops period. Students may only add classes that have not yet met, unless instructor approval is obtained. All students are encouraged to register online through MyDCC.

Curricular (program-placed) students should contact their assigned academic advisor to register for classes. For more information, contact Admissions at 434.797.8467 or admissions@danville.edu.

Course Offerings DCC reserves the right to cancel, withdraw, or combine classes when necessary. Classes with insufficient enrollment normally are canceled the first week of class (see Tuition Refund Policy).

Tuition & Fees

Tuition rates are established annually by the State Board for Community Colleges. Current rates can be verified at danville.edu/tuition. DCC has an extensive financial assistance program. Information regarding financial assistance can be found at danville.edu/financialaid.

Payment of Tuition and Fees

Fall Semester, Spring Semester, Summer Session, and Special Session Classes:
- Students enrolling for classes must pay all tuition and fees on the same day that they register.
- Failure to do so will result in the cancellation of their registration.
- Students who have not paid tuition and fees are not authorized to attend class(es).

Note: Fees are subject to change by the State Board for Community Colleges. Contact the Business Office at 434.797.8418 or visit danville.edu/tuition for the current costs.

Current Rates

As of the Spring 2020 semester, the following tuition and fee rates apply:

<table>
<thead>
<tr>
<th>Category</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Residents</td>
<td>$157.00 per credit hour</td>
</tr>
<tr>
<td>Out-of-State Residents</td>
<td>$357.10 per credit hour</td>
</tr>
<tr>
<td>Out-of-State Business Contract Rate*</td>
<td>$240.50 per credit hour</td>
</tr>
<tr>
<td>E-rate (In-State Residents)**</td>
<td>$157.00 per credit hour</td>
</tr>
<tr>
<td>E-rate (Out-of-State Residents)**</td>
<td>$262.50 per credit hour</td>
</tr>
<tr>
<td>Veterans and Dependents of Active Duty Military</td>
<td>$157.00 per credit hour</td>
</tr>
<tr>
<td>Out-of-State Military Contract Rate</td>
<td>$180.50 per credit hour</td>
</tr>
</tbody>
</table>

* The business contract rate applies to Virginia employers and federal agencies located in Virginia. It allows the business contract rate to be charged to employers for employees who have an out-of-state domicile. Charges to employers for in-state domiciled employees are at the in-state tuition rate. All mandatory E&G fees apply (including capital fee on those employees with an out-of-state domicile). It is for students who do not qualify for in-state tuition rates and are enrolled in classes provided in a contract between their employers and Danville where the employer pays the students’ tuition directly to the College. The contract rate is only available to Virginia employers; any employers that are physically located outside of Virginia and choose to send employees to Danville will be billed at out-of-state tuition rates.

**The e-rate applies to designated online courses.
All students are assessed Mandatory “Non-E&G” fees by the college including, Student Activity, and Maintenance Fees.

Student Activity Fee
The Student Activity Fee is currently $2.00 per credit hour. Monies are used for Student Activities events that may be social, cultural, or educational.

Maintenance Fee
All students enrolled for classes are required to pay a Maintenance Fee of $1.00 per credit hour for enrolled classes. These funds are used to maintain college parking lots.

All out-of-state students are assessed the mandatory “E & G” Capital Fee as applicable.

Capital Fee
Students with out-of-state residences are charged $21.00 per credit hour.

E-rate Tuition
The e-rate is applicable to designated distance learning courses delivered entirely over the internet and designated as W in the class section. Students are responsible for any college property that they damage or lose (such as laboratory or shop equipment, supplies, library books, and materials).

Nonpayment of Tuition & Fees, or Other College Debts
A student’s continued attendance at DCC is dependent upon proper settlement of all debts owed the institution. Transcripts, certificates, diplomas, or degrees will not be issued, nor will students be permitted to complete registration until accounts are cleared satisfactorily with the Business Office, Bookstore, or Library. Should the student fail to satisfy all due and payable amounts for tuition and fees, college loans, fines, or other debts owed the college, DCC may initiate disciplinary action in accordance with the Code of Student Conduct and Discipline Policy.

Bad Check/Dishonored Payment Fees
DCC assesses a $35 service charge for handling returned checks or dishonored credit card or debit card payments for accounts not in past due collection status, or $50 when the account is in past-due collection status.

Waived Tuition
23.1-609. Surviving spouses and children of certain individuals; tuition and fee waivers.
A. (Effective until January 15, 2018) The surviving spouse and any child between the ages of 16 and 25 of an individual who was killed in the line of duty while employed or serving as a (i) law-enforcement officer, including as a campus police officer appointed under Article 3 (§ 23.1-809 et seq.) of Chapter 8, sworn law-enforcement officer, firefighter, special forest warden pursuant to § 10.1-1135, member of a rescue squad, special agent of the Department of Alcoholic Beverage Control, state correctional, regional or local jail officer, regional jail or jail farm superintendent, sheriff, or deputy sheriff; (ii) member of the Virginia National Guard while serving on official state duty or federal duty under Title 32 of the United States Code; or (iii) member of the Virginia Defense Force while serving on official state duty, and any individual whose spouse was killed in the line of duty while employed or serving in any of such occupations, is entitled to a waiver of undergraduate tuition and mandatory fees at any public institution of higher education under the following conditions:
1. The chief executive officer of the deceased individual’s employer certifies that such individual was so employed and was killed in the line of duty while serving or living in the Commonwealth; and
2. The surviving spouse or child is admitted to, enrolls at, and is in attendance at DCC and applies for the waiver. Waiver recipients who make satisfactory academic progress are eligible for renewal of such waiver.
B. Institutions that grant such waivers shall waive the amounts payable for tuition, institutional charges and mandatory educational and auxiliary fees, and books and supplies but shall not waive user fees such as room and board charges.

Certification must be submitted to Student Accounts/Cashier so that a determination can be made on the request for waived tuition and fees.

For further information, contact the DCC Office of Veterans’ Affairs (434.797.8429). All recipients of Veterans’ benefits must be in an approved curriculum as recognized by the Veterans Administration and must maintain a grade point average of no less than 1.5 after 12 credit hours have been completed, excluding developmental classes.

Official Transcripts
Students and alumni can request official transcripts online, via MyDCC (if you attended in the last 10 years), by mail (Admissions Office, Wyatt Building, 1008 South Main St., Danville, VA 24541), or by fax (434.797.8451). In order to release transcripts, the student must provide the following: Student name at time of enrollment, Student ID number (EMPLID #) or Social Security Number, Date of enrollment (if prior to 1984), and student signature. Transcripts will not be released to third parties without written permission from the student.

Unofficial Transcripts
Students and alumni who attended within the last 10 years may obtain an unofficial transcript via MyDCC.

Grading System
The quality of performance in any academic course is reported by a letter grade, the assignment of which is the responsibility of the instructor. Note: The grade point average (GPA) is determined by dividing the total number of grade points earned in courses by the total number of credits attempted. Grades denote the character of study and are assigned points as follows:

24 • Danville Community College
A  Excellent - 4 grade points per credit
B  Good - 3 grade points per credit
C  Average - 2 grade points per credit
D  Poor - 1 grade point per credit
F  Failure - 0 grade point per credit
P  Pass - No grade point credit (applies to special courses)
P/U Option: No more than 7 credits can count toward graduation.
R  Re-enroll - No grade point credit (used only for Developmental Studies courses).
S  Satisfactory - No grade point credit (used only for Developmental Studies courses).
U  Unsatisfactory - No grade point credit (applies to specialized courses and seminars).
W  Withdrawal - No credit (“W” implies that the student was making satisfactory progress in the course at the time of withdrawal or that the withdrawal was officially made before the “deadline” date published in the college calendar.) See Withdrawal Policy in the next section.
I  Incomplete - No grade point credit. Used only for verifiable, unavoidable reasons that a student is unable to complete a course within the normal course time. To be eligible to receive an “I” grade, the student must (1) have satisfactorily completed more than 50% of the course requirements and (2) must request the faculty member to assign the “I” grade and indicate why it is warranted. The faculty member has the discretion to decide whether the “I” grade will be awarded. Since the “incomplete” extends enrollment in the course, requirements for satisfactory completion shall be established through consultation between the faculty member and the student.

In assigning the “I” grade, the faculty member must complete documentation that (1) states the reason for assigning the grade; (2) specifies the work to be completed and indicates its percentage in relation to the total work of the course; (3) specifies the date by which the work must be completed; and (4) identifies the default grade (B, C, D, F, P, R, or U) based upon course work already completed. Completion dates may not be set beyond the subsequent semester (to include summer term) without written approval of the chief academic officer of the campus. The student will be provided a copy of the documentation. Colleges will establish procedures to
ensure that all “I” grades that have not been changed by the faculty member through the normal grade change processes are subsequently changed to the default grade assigned by the faculty member. An “I” grade will be changed to a “W” only under documented mitigating circumstances, which must be approved by the VP for Academic and Student Services.

X Audit - No credit (Permission of the division dean is required to audit a class.)

CR Prior Credit - Credit received by exam and/or credit received for prior learning

Grading - Developmental Studies Courses

“S” (Satisfactory) shall be assigned for satisfactory completion of the course.

“R” (Re-enroll) shall be assigned to a student who makes satisfactory progress during the term but has not completed course objectives. This grade, used only for developmental studies, is to permit re-enrollment for completion of course objectives.

“U” (Unsatisfactory) shall be assigned to a student not making satisfactory progress. The Developmental Studies academic advisors, with the concurrence of the Dean of Arts, Sciences, & Business, will determine the subsequent sequence of courses for the student receiving a “U” grade.

A student may enroll no more than twice in any single developmental course. Appeal for a third and final enrollment must be addressed to the academic division.

Course Credit

The credit for each course is indicated after the title in the course description. One credit is equivalent to one collegiate semester-hour credit. Each semester hour of credit given for a course is based on the “academic hour,” which is 50 minutes of formalized, structured instructional time in a particular course weekly for fifteen weeks. This is a total of 750 minutes of instruction. In addition to instructional time, appropriate evaluation will be required. If this evaluation is a final examination, a minimum of one hour will be scheduled for each semester hour of credit generated by the course, not to exceed three academic hours (150 minutes). Credits may be assigned to the activities as follows:

1. Lecture – One academic hour of lecture (including lecture, seminar, discussion, or other similar activities) per week, generally for 15 weeks, plus the evaluation or examination period, equals one collegiate semester-hour credit.

2. Laboratory – Two to five academic hours, depending on the discipline, of laboratory, clinical training, supervised work experience, coordinated internship, or other similar activities per week, generally for 15 weeks, plus the evaluation or examination period, equals one collegiate semester-hour credit.

3. Asynchronous Distance Learning Courses – In the case of asynchronous distance learning course offerings or hybrid courses that employ a mix of traditional contact hours and learning activities, with students and faculty separated by time and place, colleges must demonstrate through faculty peer review that content and competency coverage and student outcomes are equivalent to those of traditional sections of the same class. In the event that the only section of the course being taught in the VCCS is an asynchronous or hybrid course, faculty peer review will be employed to confirm that content and competency coverage and student outcomes are appropriate for the course credits awarded.

4. General Usage Courses – Variable academic hours from one to five credits.

5. Variable Credits - A college may request that a course vary from the existing credit value, but by no more than one credit. Existing variable credit ranges may not be extended. Credit variability will not be approved for purposes of deleting laboratory hours or of making laboratory hours optional. General usage courses and courses numbered 1-99 are exempt from this policy.

Repeating a Course

A student is normally limited to two enrollments in the same credit course. If special circumstances warrant consideration of a third enrollment, the student must submit the Third Enrollment Form to the appropriate academic division. All requests for third enrollments into classes must be submitted and acted upon before the first day of classes for the term of enrollment. After reviewing the request, the committee will notify the student in writing of the decision.
Please note: Withdrawal from a course may negatively affect your financial aid award. Students are encouraged to check with the Financial Aid Office to determine the impact of a course withdrawal on financial aid eligibility. Withdrawals can be completed by telephone, online, or in person. If a student withdraws from a class prior to the refund date of the term, the student is removed from the class roll and no grade is awarded. After the add/drop period, but prior to the completion of 60 percent of a session (nine weeks for regular session), a student who withdraws or is withdrawn from a course will be assigned a grade of “W.” A student who withdraws after the last day to receive a tuition refund will receive a “W” grade and will not receive a tuition refund. If the student is receiving Financial Aid, a Return to Title IV calculation will be completed in the PeopleSoft SIS system, to determine the percent of aid earned by the student based on the withdraw or last date of attendance. The unearned portion of aid will be returned to the Department of Education, and the student will be responsible for any remaining tuition and/or bookstore charges. After the 60% point, if a student withdraws or is withdrawn from a course(s) or the college, a grade of “F” will be assigned. Exceptions to this policy may be made under mitigating circumstances, which must be documented and a copy of the documentation placed in the student’s academic file. If mitigating circumstances cause the withdrawal, and the student is making satisfactory progress at the time of withdrawal, the grade of “W” will be given. Division deans will decide whether the reason for withdrawal is mitigating. Students are eligible for a tuition refund if they drop classes or withdraw from DCC on or before the announced refund date each semester, as published in the academic calendar on the DCC website and catalog. The add/drop form or withdrawal form must be processed by the Admissions Office. Classes of shorter duration may have a different withdrawal deadline.

DCC will not consider refunds after the announced date unless:
- The student has encountered severe medical problems that relate directly to the individual student,
- In the event that military service requires the student’s sudden withdrawal or prolonged absence from their enrollment, or
- In case of an administrative error.

Before any consideration can be made, the student must appeal to the Vice President of Academic & Student Services, and then to the Vice President of Financial & Administrative Services. The tuition refund policy and the deadline dates are established by state policy.

Students who are withdrawn by the college for disciplinary reasons are not eligible for a refund of tuition/fees. A student expelled from the college after the designated refund date forfeits all payments for tuition/fees incurred for the semester the incident occurred.

Effective May 21, 2015, the State Board of Community Colleges approved a revision to the VCCS Tuition Refund Policy as listed in the VCCS Policy Manual Section 4.3.2. The revision to the VCCS policy 4.3.2 directs that course registrations shall not be deleted for students who receive a tuition refund for extenuating circumstances after the end of the add/drop period, but a grade of “W” would be assigned instead. Students who request to be withdrawn with a tuition refund, after the stated refund date, must submit a request to the Vice President of Academic Services, with supporting documentation. If approved, the Admissions Office, the Business Office, and the Financial Aid Office will be notified of the tuition amount approved for refund.
This policy only relates to tuition, so the student may be responsible for bookstore charges.

For students who paid using gift aid, the amount of aid earned will not be impacted. The Return to Title IV process will be followed. The tuition amount approved for refund will be based on any remaining balance after adjustments have been made, but will not exceed the original tuition cost.

Pro-rated Tuition Refund
Students are eligible for a pro-rated tuition refund if they drop classes or withdraw from college on or before the published refund date as indicated in the academic calendar. DCC will not consider tuition refunds after that date unless you meet one of the following circumstances:

• A medical issue that prevents you from continuing your studies, Your death or the death of an immediate family member,
• National emergency declared by the President of the United States,
• An administrative error made by the college, or
• The student is going through extreme financial hardship.

Requests for pro-rated tuition refunds after the refund date must be submitted within 30 days following the official drop date for the class(es). The student must document the extenuating circumstance as follows:

- Medical Emergency, such as:
  • An extended illness or major medical issue affecting the student or members of student’s immediate family (mother, father, sister, brother, wife, child or grandparent) occurring during the semester you are registered, which requires hospitalization, is life-threatening or is contagious and a danger to the remainder of the college community. A written verification on letterhead by the attending physician is required and must include the initial date of the problem, a statement that you are required not to attend class, and the duration of the problem.

- A psychiatric/psychological emergency or severe, extended illness occurring during the semester you are registered, which requires hospitalization or that prevents you from attending classes. A written verification on letterhead by the attending mental health therapist is required and must include the initial date of the problem, a statement that you are not required to attend class, and the duration of the problem.

- Death of the student or a member of the student’s...
Mitigating Circumstance Tuition Refund Process

1. Student withdraws from class with mitigating circumstances after the last day to receive a tuition refund as stated in the college calendar.
2. Student submits partial tuition request to the Vice President of Academic & Student Services within 30 days after the official withdrawal date. This request should include a typed letter and supporting documentation.
3. The VP will notify the student of the decision.
4. The VP will notify the registration office via the Withdrawal with Tuition Refund form. The registration office will notify the business office of the decision if the partial refund is approved.
5. For students receiving Federal Financial Aid, the Return to Title IV process is completed and adjustments are submitted to the business office. A write-off entry will be made on the account for the approved tuition refund based on the calculated days of award earned. If a tuition or bookstore balance remains, the student will be notified and billed.
6. For students who have paid out-of-pocket, the withdrawal code will be changed by the registration office upon receipt of the Withdrawal with Tuition Refund form indicating approval by the VP. Partial tuition of 25%, 50%, or 75% will be refunded based on the amount of time the student has remained in the class.

Policy on Refunds, Credits, & Reinstatement due to Military Service

Each community college shall have a policy statement providing for the tuition relief, refund, and reinstatement of military students in the event that military service requires their sudden withdrawal or prolonged absence from their enrollment. For purposes of this section, military services is defined as service on active duty in the Armed Forces, including such service by a member of the National Guard or Reserve, when mobilized or deployed for a period of more than 30 days. Dependents of military members may also be given consideration under this policy. Dependents are defined as any civilian qualifying as a military dependent under 37 USC 401 currently or as otherwise amended. Each community college shall provide for the following:

A. Tuition and Required Fees: Should a student (as defined above) request to be withdrawn from the college after the census date, the student may elect either to be deleted from the registration file and be awarded a full refund, or to be administratively withdrawn with no refund and assigned a grade of “W”. Each community college shall also have a policy statement regarding the granting of refunds of Misc. Education, General program, Auxiliary Services and Student Activity fees to students. The college shall provide, at the option of the student, for such refunds to be retained and to be applicable to tuition and fees charged in the semester or term in which the student returns to study.

B. Deposits: Each community college shall have a policy statement regarding the granting of refunds of deposits to students.

C. Textbooks: Each community college shall process refunds for textbooks according to contractual arrangement with local vendors.

D. Academic Credits and Grades: Students as defined above should have the opportunity to receive an incomplete grade (“I”). All course requirements shall be completed within one year from the date of release from active duty or mobilization. Students may be given the option of taking their exams prior to regularly scheduled times. Careful consideration should be given and special options are advised for students who receive student financial aid or Veterans Administration benefits.

E. Reinstatement: Students as defined above shall be assured a reasonable opportunity to be reinstated in the same programs of study without having to re-apply for admission if they return to the same community college after a cumulative absence of not more than five years, so long as the student provides notice of intent to return to the institution not later than three years after the completion of the period of service.

F. Dissemination of Information: Community college officials should make every effort to ensure that the aforementioned VCCS policies relative to tuition relief, refund, academic credit and reinstatement are well disseminated and carefully explained in accordance with the requirements of the Code of Virginia, Section 23-9.6:2, and the Virginia Tuition Relief, Refund, and Reinstatement Guidelines in the appropriate college publications. The Division of Student Support Services ensures that these policies are properly disseminated and administered.
Degrees, Diplomas, and Certificates
Danville Community College offers the following degrees, diplomas, and certificates for students who successfully complete approved programs:

1. An Associate of Arts and Science Degree (AA&S) is awarded to students majoring in Business Administration, Liberal Arts, and Science, who plan to transfer to four-year colleges or universities after completing their Danville Community College program.

2. An Associate of Applied Science Degree (AAS) is awarded to students majoring in one of the occupational-technical programs and who plan to obtain full-time employment immediately upon graduation.

3. An Associate of Science Degree (AS) is awarded to students majoring in Engineering and who plan to transfer to a baccalaureate program at a university.

4. A Diploma is awarded to students who complete one of the two-year non-degree occupational curricula.

5. A Certificate is awarded to students who complete one of the approved non-degree curricula that are usually less than two years in length. DCC also offers Career Studies Certificates for programs that can be completed in less than one year.

See the Programs of Study section of this catalog for more information, or contact the Admissions Office.

Catalog Year Determination
All students who are initially placed in a program (including Developmental Studies) are placed in a catalog year at the same time. The catalog year to which a student is assigned determines the catalog which describes their program requirements. Keeping in mind that the catalog goes Summer, Fall, and Spring, a student who is accepted for Summer 2020, Fall 2019-2020, or Spring 2021 will be placed in the 2020-2021 catalog year. Students who have been attending in a non-curricular status will be placed in the catalog year corresponding to their program placement, not the catalog year corresponding to the year they became a non-curricular student. Students who were previously in a program and dropped out of college for at least one year or changed programs and then ask to be readmitted to the original program after one year will be placed in the program in existence at the time of their re-admittance. Students who drop out for less than one year or request re-admittance to a program within a year after dropping out of it, will be readmitted under the original catalog, unless there have been significant changes to the program requirements. The counselor, in consultation with the Division Dean, will be responsible for selecting the catalog year when there is a question about which to use.

Double Majors
Students desiring to declare more than one major (outside of a pathway) must meet one of the following two criteria: 1. Entering students must be placed in college-level courses (no developmental requirements) or complete at least 12 credit hours earning a 2.5 or higher; or 2. Returning students...
must meet and maintain satisfactory academic progress (2.5 or higher) in order to be program placed in a second major.

**Requirements for Graduation**
To be eligible for graduation with an associate degree, diploma, certificate, or career studies certificate from DCC, students must:

a) Fulfill all of the course and credit-hour requirements of the curriculum with at least 25% of credit semester hours acquired at the college granting the award;

b) Be certified by an appropriate college official for graduation;

c) Earn a grade point average of at least 2.0 in all studies attempted which are applicable toward graduation in their curricula;

d) Meet any other competency requirements established by the college;

e) Meet any graduation application requirements established by the college; and

f) Resolve all financial obligations to the college and return all library and college materials.

**Graduation Honors and Awards**
Appropriate honors, based upon scholastic achievement at DCC, are recorded on diplomas, certificates, or degrees.

**Grade Point Average or Better**

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Honors</th>
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<tr>
<td>3.2</td>
<td>Cum Laude (with honors)</td>
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<tr>
<td>3.5</td>
<td>Magna Cum Laude (with higher honors)</td>
</tr>
<tr>
<td>3.8</td>
<td>Summa Cum Laude (with highest honors)</td>
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</tbody>
</table>

**Academic Information**

**Academic Load**
The normal course load during a regular semester at Danville Community College is 15-18 semester hours. A student must register for at least 12 credits to be considered a full-time student. A student planning to enroll in 19 or 20 semester hours must have a 3.0 grade point average or higher and/or the approval of his/her Division Dean. Under exceptional circumstances, a student may be allowed to enroll in more than 20 semester hours provided a request is made in writing to the Vice President of Academic and Student Services and supported by written statements from the student's advisor and Division Dean.

During the summer session, a student is restricted to two regular courses each summer term or 12-14 semester hours for the entire summer session. Students wishing to enroll in 15 semester hours must have a 3.0 grade point average or higher and/or the approval of the appropriate Division Dean. Under exceptional circumstances, a student may be allowed to enroll in more than 15 semester hours provided a request is made in writing to the Vice President of Academic and Student Services and supported by written statements from the student's advisor and Division Dean.

**Academic Standing**
Students are considered to be “in good academic standing” if they maintain a semester minimum GPA of 2.00; are eligible to re-enroll at the college; and are not on academic suspension or dismissal status.

**Honors Program-Chair**
In keeping with the college's commitment to provide educational opportunities consistent with the ability and interests of the individual student, DCC invites motivated students to enroll in its Honors Program-Chair. This program consists of individually contracted honors projects in regularly-sectioned courses or honors courses. Students may earn “Honors Scholar” designation on their diplomas and transcripts by completing a minimum of 12 credit hours of honors work and achieving an overall a GPA of 3.0 or greater. All honors work must be completed one week prior to the end of the semester.

Students are eligible for honors work if they meet all of the following criteria:
1. Completed all developmental coursework (if required)
2. A 3.25 or higher high school GPA
3. A 3.0 or greater overall GPA in non-honors courses
4. Satisfied prerequisites of each Honors Community course
5. Endorsement of two DCC faculty members

Honors projects are negotiated with faculty and the Honors Program-Chair. These projects can be done in any non-honors course and typically focus on topics of special interest to the student and require appropriate additional or alternative assignments which go beyond regular coursework. For more information, contact the Honors Program-Chair, honors@danville.edu.

**Academic Honors**

**President's Honors List:** Students must be enrolled for six or more credit hours for the semester during which the honor is extended, have achieved a cumulative GPA of at least 3.0, a semester GPA of 3.75 or higher, and have completed 24 semester hours or more at DCC.

**Vice President's Honors List:** Students must be enrolled for six or more credit hours for the semester during which the honor is extended, have achieved a cumulative GPA of at least 3.0, a semester GPA of 3.0 to 3.74, and have completed 24 semester hours or more at DCC.

**Academic Warning**
Students who fail to attain a minimum GPA of 2.00 for any semester shall be placed on academic warning. Students should see their advisor/counselor and take advantage of academic support services provided by the college.
Academic Probation
Students who fail to maintain a cumulative GPA of 1.50 shall be on academic probation until such time as their cumulative average is 1.75 or better. The statement “Academic Probation” shall be placed on their permanent records. Students on probation are ineligible for appointive or elective office in student organizations unless special permission is granted by the Vice President of Academic and Student Services or another appropriate college administrator. Students may be required to carry less than a normal load for the following semester and are required to consult with their academic advisor/counselor. Students shall be placed on probation only after they have attempted 12 semester credits.

Academic Suspension
Students on academic probation who fail to attain a semester GPA of 1.50 or better shall be placed on suspension only after they have attempted 24 semester credits. Academic suspension shall be for one semester. The statement “Academic Suspension” shall be placed on the students’ permanent records. Students who are placed on academic suspension and wish to appeal should follow the appeal process established by the college. Suspended students may be reinstated at the conclusion of the suspension period. Students who have been reinstated from academic suspension must achieve a 2.00 GPA or better for the semester of their reinstatement and must earn at least a 1.75 GPA in each subsequent semester of attendance. The statement “Subject to Dismissal” shall be placed on the students’ permanent records. Students who have been reinstated from academic suspension will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor.

Academic Dismissal
Students who do not attain at least a 2.00 GPA for the semester of reinstatement following academic suspension shall be academically dismissed. Students who achieve at least a 2.00 GPA for the semester of their reinstatement following academic suspension must earn at least a 1.75 GPA in each subsequent semester of enrollment. Failure to attain a 1.75 GPA in each subsequent semester until the cumulative GPA reaches 1.75 shall result in academic dismissal. The statement “Academic Dismissal” shall be placed on the students’ permanent records. Academic dismissal is normally permanent. In exceptional circumstances, students may appeal and be reinstated following processes established by the college. Students who have been reinstated after academic dismissal will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor.
load the following semester and are required to consult with their advisor/counselor.

**Academic Renewal**

Students who return to DCC after a separation of five years or more may petition for academic renewal. The request must be in writing on the Academic Renewal Selection Form available in the Admissions Office. The purpose of this policy shall be to adjust the cumulative GPA of eligible students who have enrollments from 1984 and forward. If a student is determined to be eligible for academic renewal, “D” and “F” grades earned prior to re-enrollment will be deleted from the cumulative and curriculum GPA, subject to the following conditions:

1. Prior to petitioning for academic renewal the student must demonstrate a renewed academic interest and effort by earning at least a 2.5 GPA in the first 12 semester hours completed after re-enrollment.
2. All grades received at DCC will be part of the student’s official transcript.
3. Students will receive degree credit only for courses in which grades of “C” or better were earned prior to academic renewal, provided that such courses meet current curriculum requirements.
4. Total hours for graduation will be based on all coursework taken at DCC after readmission, as well as former coursework for which a grade of “C” or better was earned, and credits transferred from other colleges or universities.
5. The academic renewal policy may be used only once and cannot be revoked once approved. All students should be warned about the pitfalls of “Academic Renewal.” (Example: A student may have a “D” in a course that is needed for graduation, but cannot get credit for the course if it is part of Academic Renewal. The course will have to be repeated.)

A student denied Academic Renewal may appeal the decision to a committee chaired by the Dean of Student Support Services, with the other two committee members being appointed annually by the dean. A written appeal should be sent to the Dean of Student Support Services within seven days of denial.

**Prerequisites and Corequisites**

Many courses at DCC are associated with other courses referred to as prerequisites and corequisites. The idea is that in order to be successful in a certain course, the student must have acquired or be in the process of acquiring certain other skills or knowledge. A prerequisite is a course that a student must take before enrolling in a particular course. - Example: Biology 102 has Biology 101 as a prerequisite. Students must successfully complete Biology 101 before taking 102. A corequisite is a course which a student must take while they are taking another course if they have not already completed that course. - Example: MTE 3, MTE 4, and MTE 5 are corequisites for Biology 101. One must take these courses while taking Biology 101 if one has not completed them already. Prerequisites for each course are included in the programs of study section of this catalog where applicable.

**GPA for Repeat Courses**

A student’s GPA will reflect only the last grade received for repeat courses initially taken since summer 1994. “General Usage” courses, such as 099, 199, etc., are not counted. Repeat courses not figured in the GPA will be designated on the transcript with the words “repeated course” under the class.

**Attendance**

Student/faculty interactions are critical to the learning process. Regular class attendance is thus expected of students. Students missing 25% or more of the total time
allocated for classes and/or labs will be administratively withdrawn from the course upon recommendation of the instructor. Students administratively withdrawn prior to the completion of 60% of the classes and/or labs will be issued a grade of “W.” After that point, students who are administratively withdrawn will be issued a grade of “F.” Faculty have the discretion to establish more restrictive policies published in the course outline. Faculty also may excuse a student when documented, mitigating circumstances prevent the student from attending a class or lab session. Failure to attend classes will negatively affect one’s financial aid award.

Examinations
Students are expected to take all examinations, including final examinations, at the regularly scheduled time. Exceptions cannot be made without permission of the instructor.

Academic Honesty
Students are expected to maintain complete honesty and integrity in their experiences in the classroom. Any student found guilty of dishonesty in academic work is subject to disciplinary action.
1. DCC may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including, but not limited to, the following:
   a. Copying from another student’s test paper or other academic work.
   b. Using materials not authorized by the person giving the test.
   c. Collaborating, without authorization, with another student during an exam or in preparing academic work.
   d. Knowingly using, buying, selling, stealing, transporting, or soliciting, in whole or part, the contents of an un-administered test.
   e. Substitution for another student, or permitting another student to substitute for oneself, to take a test or prepare other academic work.
   f. Bribery another person to obtain an un-administered test or information about an un-administered test.
   g. The appropriation of another’s work without acknowledging the incorporation of another’s work in one’s own written work (plagiarism).

2. A student who receives a failing grade (“F”) in a course as a result of academic dishonesty (such as plagiarism) may not withdraw from that course with a “W” or receive a refund. This policy applies to any student in a particular course deemed to have committed an act of academic dishonesty during any part of a semester, and regardless of whether he/she has turned in any graded work. Mitigating circumstances do not apply in such cases. A student may follow the appeal process outlined in the DCC Student Handbook to appeal the failing grade.

3. Discipline procedures for academic dishonesty are found in the Student Handbook.

Assessment Requirements
The Commonwealth of Virginia requires a comprehensive plan for student outcomes assessment. The Danville Community College Plan was approved by the State Council of Higher Education for Virginia in 1987 and has been reviewed each year. The Plan includes procedures to ensure that the institution has an effective process for improving the instructional and student development programs, including assessing general education competencies of degree-seeking students (Associate of Arts and Science, Associate of Science and Associate of Applied Science Degrees). Students are required to participate in the assessment procedures which are appropriate to their curricula. For additional information, contact the Director of Planning, Effectiveness and Research at 434.797.8576.

Outcomes Assessment Requirement
Degree students will be required to take a core competency test designed to measure general education achievement prior to graduation for the purpose of evaluating general education competencies. No minimum score or level of achievement is required for graduation. Individual test results will remain confidential. Group scores will be used for accountability to the state and for improvement of academic programs.

Institutional Effectiveness Days
Two class days are designated each academic year (one per term) as Institutional Effectiveness Day.
Danville Community College plays a vital role in regional economic development. Through its Workforce Services division, DCC provides a wide variety of educational opportunities designed to meet occupational, professional, and personal interests and needs. Programs begin at various times throughout the year and vary in length. Services include custom training programs; short workshops and seminars; high-tech training using state-of-the-art equipment; credentialing or career training, management and supervisory development; basic career skills; and use of college facilities for company-sponsored training.

Financial aid and grant funding may be available for certain workforce programs. For more information, contact 434.797.8582 or visit danville.edu/workforce.

Apprenticeship
Apprenticeship training is coordinated through DCC in partnership with the Virginia Dept. of Labor and Industry. Apprenticeship is a training system that assists businesses and employees with skills development. Apprentices learn the “how to” of their occupation on the job and learn the “why” in related technical instruction taught in the classroom. Apprentices receive on-the-job training combined with classroom-related instruction to ensure that the apprentice is fully trained in all areas of their chosen occupation. Students may work part-time or full-time as registered apprentices. They must be actively pursuing career preparation courses or a diploma, certificate or degree program related to their occupation, include apprenticeship related instruction as part of coursework, and enter into a written training agreement that represents a partnership between the employer, the Virginia Apprenticeship Council, and the student. Apprentices are awarded a journeyman certificate from the Commonwealth of Virginia after successful completion of the on-the-job training and related instruction.

For more information, contact 434.797.8582.

Continuing adult education and community service programs are offered in order to fulfill the educational needs of the community. These include: (1) the opportunity to pursue a degree or certificate curriculum of study or to take courses either with or without college credit during the regular day and evening class hours; (2) classes, forums, lectures, exhibits, short courses,(3) various community development programs and seminars; (4) an offering of non-cataloged special courses or programs to the community’s industries, businesses or professions, directed and taught at the college or at the client’s site by the faculty and staff of the college; and (5) special services such as use of college facilities, tours and visits and other services as they are needed. Non-credit courses and activities are offered on a self-supporting basis.

Consistent with the college’s mission of serving the educational needs and helping meet the requirements for trained manpower in the service area, the Regional Center for Advanced Technology and Training (RCATT) was established in to assist public and private organizations with economic and human resource development. Through a variety of activities, including seminars, training, consultation and resource networking, the Center works to assist community economic development by:

- Promoting quality team building,
- Increasing productivity and the quality of the working environment,
- Attracting new businesses and industry, and
- Educating the general public about economic development.

Funding assistance programs are available to students seeking workforce training and credentialing. These programs are designed to cover unmet costs of tuition, books, and supplies.

- **TARE (Training, Assessment, Retention and Employment) Grant** provides financial assistance for students who are already receiving Virginia’s Temporary Assistance for Needy Families (TANF) or the Virginia Initiative for Employment Not Welfare (VIEW). Students who are already receiving Supplemental Nutrition Assistance Program (SNAP) may be eligible for the SNAP Employment and Training Grant.

- **Financial Aid for Noncredit Training leading to Industry Credentials (FANTIC) Grant** provides need-based tuition assistance for students enrolled in a workforce training program leading to an industry credential or licensure.

- **New Economy Workforce Credentials Grant (WCG)** is a program in Virginia that provides a pay-for-performance model for assisting students in paying for eligible FastForward workforce training program tuition that have been approved to lead to an industry-recognized credential in high-demand fields. Most programs take between six and twelve weeks and are built so students can get their education while they work. Eligible students can earn an industry credential at 1/3 the cost. The program includes requirements for students to complete the program of study in order to avoid paying additional costs.

**Eligible FastForward Programs:**
- CDL Tractor Trailer
- Certified Nurse Aide (CNA)
- CompTIA A+
- CompTIA A+ Networking
- Manufacturing Technician (MT1)
- Manufacturing Specialist (MS)
- Welding – Gas Tungsten Arc Welding (GTAW)
- Welding – Gas Metal Arc Welding (GMAW)
All requests for funding assistance will be reviewed on a “first come, first served” basis. Priority will be given to students residing within the college’s service region and those demonstrating the greatest financial need. The application process includes a completed application, personal essay, and documentation of financial need.

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**Student Services**

**Academic Counseling:** Danville Community College provides ongoing academic counseling services to students. College staff members are professionally trained to help students with decisions on a broad range of educational and career concerns. Visit us online at danville.edu/students.

**Disability Services:** Danville Community College believes in promoting an atmosphere free on inequity and partiality in which all students have access to educational opportunity. DCC believes in creating an inclusive and welcoming community for all students. DCC is committed to ensuring that all qualified students with disabilities have the opportunity to take part in educational programs and services on an equal basis. The College is committed to removing architectural barriers, but also strives to ensure that students with disabilities receive access to reasonable accommodations for students with disabilities in accordance with their documented disabilities.

In order that the College may assess each student’s needs and plan most effectively for his or her academic experience, the student should contact the Counseling Office at 434.797.8572.

**Library & Tutoring Services**

*The Whittington W. Clement Learning Resources Center (LRC)* provides information and instructional support services. Centrally located on campus, the LRC opened to students, faculty, and the community in October 1994. Housing the Library, Audio-Visual Services, Tutoring Center, and the Teaching, Learning and Technology Center, the LRC incorporates the latest in educational technology to offer a unique mix of traditional and nontraditional resources for learning and teaching. For more information, please call 434.797.8598 or visit danville.edu/library.

**The Mary M. Barksdale Library** houses a collection of more than 58,000 items in support of DCC instructional programs, including books, non-print media, periodicals, government documents, and more. As a member of VIVA, students and faculty have online access to databases including thousands of digital and print journals, books, and reference sources. Audio-visual equipment is available for previewing audio and video programs. The library offers strong reference support, and the staff is available to instruct individuals or groups in the use of resources. An open computer lab is available for students, staff, and the public. For more information, please call 434.797.8555.

**Audio-Visual Services:** Located on the lower level of the LRC, this department provides installation and maintenance of audio-visual equipment as well as faculty and staff training. For more information, call 434.797.8466.
Distance Learning: Coordinated through the LRC, DCC’s distance learning program gives students the opportunity to attend accredited college classes in a flexible way. The college employs sound and acceptable practices for determining the amount and level of credit awarded for courses, regardless of format or mode of delivery. Distance learning students use a variety of learning resources including videos, textbooks, study guides, Interactive Television, and the internet to complete coursework and earn college credit at home or at convenient off-campus locations. Distance learning courses are designed to be comparable to traditional on-campus courses. The primary difference centers on the degree of responsibility the student accepts when taking a distance learning course. For some, this aspect makes distance learning courses an ideal way of continuing their education because it alleviates many time constraints and scheduling conflicts. All distance learning courses have an assigned instructor. In addition, distance learning students have access to campus learning resources and student support services.

The Teaching, Learning & Technology Center provides assistance to faculty who wish to use instructional technologies in their teaching. Located in the Mary M. Barksdale Library, the college’s librarians work directly with instructors to develop applications and also provides information technology training for faculty and staff. For more information, call 434.797.8598.

DCC’s Tutoring Center, which is nationally certified by the College Reading and Learning Association, provides free tutoring to currently enrolled DCC students to support their DCC coursework. Tutoring is provided by trained professional and peer tutors. Both one-on-one peer tutoring and small group tutoring are available. The Tutoring Center is located on the upper level of the LRC. For more information on tutoring services, call 434.797.6432.

Students may also access Brainfuse, on or off-campus, for tutoring assistance through Canvas. Brainfuse offers online tutoring in various subjects, some available 24/7, with a staff of more than 2000 tutors worldwide.

Financial Aid

Financial Aid
DCC is committed in its belief that qualified students should have an opportunity to pursue higher education, regardless of their financial situation. To be considered for financial assistance, students must first complete the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov and submit it to DCC by entering 003758 for the federal school code. Computers are available for completing the FAFSA in the Financial Aid Office in Wyatt 111 during business hours. To be eligible, the student must enroll in an eligible curriculum and make satisfactory academic progress in the program of study. For more information, visit the Financial Aid website: danville.edu/financialaid

Types of Financial Aid
Federal Work-Study Program Students who show sufficient financial need may be employed as work-study employees on campus while attending college. Students who are enrolled at least half time may work an average of 10-12 hours per week. For information or to apply, visit the Financial Aid office in Wyatt 111.

Federal Pell Grant Program Full-time and part-time students who show sufficient financial need and are enrolled in eligible curricula may receive non-repayable aid under this program.

Federal Supplemental Educational Opportunity Grant Program Students who show sufficient financial need may qualify for this non-repayable grant.

Direct Federal Student Loan Program Students who do not receive sufficient grant aid to attend college may request a student loan. Forms are available in the Financial Aid Office or online.

DCC Educational Foundation Scholarships The DCC Educational Foundation awards approximately 300 scholarships totaling $500,000 annually in financial assistance to eligible DCC students through the generosity of its donors. The DCC Educational Foundation also awards graduation scholarships to eligible students graduating from DCC who are transferring to four-year institutions.

For more information, contact the DCC Educational Foundation Office at 434.797.8437 or 434.797.8495. Full details about individual scholarships and the online scholarship application are available on the DCC Educational Foundation’s website: danville.edu/dcc-educational-foundation-scholarships

State Grants
• The Commonwealth Award (COMA) Grant: Preference is given to students with exceptional need. Recipient must be domiciled in Virginia and enroll for at least six (6) credits.
• The Virginia Guaranteed Assistance Program (VGAP) Grant recipient must be: A first-time freshman, a dependent, a high school graduate with a high school GPA of at least 2.5, a Virginia resident, and demonstrate financial need. Recipients must be enrolled as a full-time student, must maintain a minimum of a 2.0 GPA each semester, and must complete a minimum of 24 semester hours each academic year to remain eligible for consideration during the next academic year.
• The Part-time Tuition Assistance Program Grant is a campus-based Virginia Community College System grant program based on need and awarded to eligible students who are enrolled for 1 to 8 credits a semester. These grant awards are for tuition and fees only.
Return to Title IV Funds Policy For Financial Aid Recipients
Federal regulations require DCC to have a written policy for the return of federal (Title IV) financial aid by students who withdraw during a term for which federal financial aid was awarded. This policy applies to all financial aid recipients who withdraw or are dismissed from DCC, or who stop attending before completing 60% of the enrollment period. Title IV programs subject to this policy are Federal Pell, Federal SEOG, and Direct Federal Student Loans. Financial aid recipients are required to attend all classes in which they enroll. Students who fail to begin attendance are not eligible to receive any portion of the financial aid awarded and may be required to repay all financial aid funds used for tuition, fees, or bookstore charges as well as any cash received for the non-attended course(s). A student’s enrollment status at the end of the drop/add period determines the student’s financial aid for the term. Students who stop attending should withdraw from DCC following official withdrawal procedures outlined in this catalog. Financial aid students must notify the Financial Aid Office before withdrawing.

Veterans Programs and courses of study (including Career Studies Certificates) at DCC are approved by the Virginia Department of Education and the Veterans Administration for payment of veteran’s educational benefits. Programs include the Montgomery GI Bill, Vocational Rehabilitation, and the Educational Benefits for Dependents and Spouses and Active Duty Tuition Assistance. For information about VA educational benefits, contact the DCC Veteran’s Affairs Specialist or the Veteran’s Administration in Roanoke (1.800.827.1000). Free tuition is available for dependents of certain disabled or deceased (service-related) veterans through the Virginia War Veterans Department.

DCC is a member of the Servicemen’s Opportunity College (SOC) Network and recognizes that learning occurs in extra-institutional and non-instructional settings. As an SOC institution, DCC awards credit for CLEP, DSST, ECE and DANTES as appropriate for each veteran student’s program of study. All veterans receive a physical education credit for basic training. DCC is dedicated to recognizing the experience, training and education of veterans and will on a case-by-case basis evaluate each individual to ensure that they receive the maximum allowable credits.

Students wishing to submit a Veteran Certification Request should go to the Financial Aid Office each semester.

Post 9/11 GI Bill (Chapter 33) The Post-9/11 GI Bill is for individuals with at least 90 days of aggregate service on or after September 11, 2001, or individuals discharged with a service-connected disability after 30 days. Honorable discharge required for eligibility. For more information, visit www.gibill.va.gov/ GI_Bill_Info/benefits.htm.

Transfer of Post 9/11 GI Bill Benefits to Dependents (TEB) Service members enrolled in the Post 9/11 GI Bill program are able to transfer unused educational benefits to their spouses or children effective August 1, 2009. For more information on how to apply for TEB, visit www.gibill.va.gov/ GI_Bill_Info/Ch33/Transfer.htm.

Academic Residency Requirement for Active Duty Service Members: DCC limits academic residency to no more than 25 percent of the degree requirements for all associate degrees for active-duty service members. Academic residency can be completed at any time while active-duty service members are enrolled. Reservists and National Guardsmen on active-duty are covered in the same manner. The following individuals shall be charged a rate of tuition not to exceed the in-state rate for tuition and fees purposes:

- A veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill - Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in Virginia while attending a school located in Virginia (regardless of his/her formal State of residence) and enrolls in the school within three years of discharge from a period of active duty service of 90 days or more.
- Anyone using transferred Post-9/11 GI Bill benefits (38 U.S.C. § 3319) who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence) and enrolls in the school within three years of the transferor’s discharge from a period of active duty service of 90 days or more.
- A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence) and enrolls in the school within three years of the Service member’s death in the line of duty following a period of active duty service of 90 days or more.
- An individual using educational assistance under chapter 31, Vocational Rehabilitation and Employment (VR&E) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) effective for courses, semesters, or terms beginning after March 1, 2019.
- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three-year period following discharge or release as described above and must be using educational benefits under either chapter 30, chapter 33, or chapter 31 of title 38, United States Code.

This policy shall be amended as necessary to be compliant with the requirements of 38 U.S.C. 3679 as amended.

Definitions: A covered individual is any individual who is entitled to educational assistance under Chapter 31, Vocational Rehabilitation and Employment, or Chapter 33, Post-9/11 GI Bill® benefits.

Policy: Danville Community College requires all covered individuals to submit a written request of certification of their enrollment each semester for which they plan to use their Chapter 31 or 33 entitlement benefits. The Certification Request for Veterans Affairs (VA) Educational Benefits must be submitted no later than the last day to drop and receive a refund for the respective semester.

Any covered individual will be permitted to attend or participate in a course of education during the period beginning on the date on which the individual provides to Danville Community College a Certificate of Eligibility for entitlement to educational assistance under Chapter 31 or 33 (a “certificate of eligibility” can also include a Statement of Benefits obtained from the Department of Veterans Affairs (VA) website, eBenefits, or a VAF 28-1905 form for Chapter 31 authorization purposes) and ending on the earlier of the following dates:
1. The date on which payment from VA is made to Danville Community College.
2. 90 days after the date Danville Community College certified tuition and fees following the receipt of the certificate of eligibility.

Due to the delayed disbursement of funding from the VA under Chapter 31 or 33, Danville Community College will not assess a late penalty fee, deny access to classes, libraries, or other institutional facilities, or require a covered individual to borrow additional funds because of the individual’s inability to meet his or her financial obligations to Danville Community College for the VA delay.

Danville Community College reserves the right to follow normal collection procedures for any difference between the amount of a covered individual’s financial obligation and the amount of the VA education benefit disbursement.

Career Coaches
High school career coaches work within local schools and provide students with individualized career and college planning.

Student Success Coaches
The College Success Coaches help underserved students in their first year of study. The coaches are assigned a caseload. Their target population will be students who have 14 or fewer credits, who are considered underserved because of meeting one of more of three criteria: race/ethnicity, Pell status, and first generation. Coaches work closely with faculty and counselors to ensure that students are progressing and receive any support services needed.

Middle College - The Middle College offers individuals aged 18-24 years old who do not have a high school credential the opportunity to obtain a GED and workforce preparation, including earning a Career Readiness Certificate (CRC). Middle College also helps students with the financial aid process; career counseling; selecting a program of study at DCC; and earning a certificate, diploma or associate degree. For additional information, visit danville.edu.

Southern Piedmont Educational Opportunity Center (EOC) The EOC provides services aimed at low-income and first-generation college students throughout southern Virginia. Headquartered at DCC, the EOC offers assistance completing admission and financial aid applications to any college or university, information on GED programs, scholarship information, career counseling and assessments, and academic advising. For more information, call 434.797.8577 or stop by the office on the first floor of the Wyatt Building.

Student Activities Student activities are designed to provide meaningful educational, cultural, and social experiences. A current list of campus clubs and organizations may be found at danville.edu. All clubs, organizations and activities have a staff advisor and/or sponsor. Official recognition is given only to those clubs and organizations which have been approved by the Student Government Association and the Dean of Student Support Services. Should a sufficient number of students desire a particular activity, they must petition the Student Government Association for official recognition.
Student Handbook The student handbook describes student activities and organizations, student rights and responsibilities, and college rules and regulations. Students are bound by the policies set forth therein. The handbook is widely distributed across campus and is available in the Admissions Office and on the website.

Student Conduct It is assumed that persons of college age are responsible adults and will maintain standards of conduct appropriate to membership in the college community. Failure to meet standards of conduct may result in disciplinary probation, depending upon the nature of the offense. The Student Handbook includes the complete College Initiated Code of Student Conduct and Discipline and explains the channels of communication available to students.

Information Technology Resources DCC provides telecommunications centers, library technological infrastructure, and computing centers to support the academic programs of the college. Users of these resources are expected to abide by the established Computer Ethics Guidelines.

Parking and Traffic All student, faculty, and staff vehicles parked on campus must bear a current DCC parking sticker. Reserved spaces for faculty and staff are clearly marked with yellow lines. Student parking spaces are marked with white lines. Designated parking areas marked with blue lines are provided at every campus building to accommodate disabled students. Disabled parking permits are issued in the office of the Vice President of Academic and Student Services.

Parking permits are issued to students in the Wyatt Building, Room 104 Cashier’s Window. DCC has a 20 mph speed limit in parking lots and a 25 mph speed limit on Neathery Lane, which are strictly enforced. Anyone violating campus speed limits will have parking privileges revoked. Security personnel issue tickets for parking violations. Students who receive more than one ticket will be subject to the college-initiated Code of Student Conduct & Discipline, which includes towing.

Drug and Alcohol Abuse Policy DCC is committed to providing a drug-free environment for its employees and students. It is a violation of college rules for students to manufacture, distribute, dispense, or use controlled substances while participating in college-related activities, on or off campus. Students who are using or dealing drugs are subject to disciplinary procedures. Students convicted of drug-related offenses are required to notify the Vice President of Academic and Student Services within five days of such conviction. Students who are involved with drugs or who have drug-related problems are encouraged to contact the Dean of Student Success and Academic Advancement for assistance in obtaining treatment. (All such contacts will remain confidential.) For more information, see the Student Handbook or contact the Dean of Student Success and Academic Advancement. The college is committed to providing ongoing educational information to students covering the effects and consequences of substance abuse.

Campus Security and Crime Awareness Annual Report In compliance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (formerly known as the 1990 Student Right-to-Know and Campus Security Act), DCC annually provides the following information to students, faculty, staff, the College Board, and the community:

• Procedures for Reporting Crimes and Other Emergencies
• Access to the Campus, Facilities, and Campus Security
• Campus Awareness Programs Relative to Safety and Security
• Vital Statistics
• College Policy on Alcohol and Illegal Drugs
• College Policy on Sexual Misconduct
• College Policy on Firearms and Other Weapons
• Emergency Response and Communication

The information is published in the DCC Campus Security and Crime Awareness Annual Report. A printed copy of this information can be obtained from the office of the Vice President of Financial and Administrative Services. The report is available online at danville.edu/security.

Policy for Animals (Pets) on Campus No pets or other animals are permitted on campus except for service animals used by persons with disabilities and animals used by the college for educational purposes. No animals may be left unattended on campus in parked vehicles.

Possession of Weapons Prohibited Possession or carrying of any weapon by any person, except a police officer, is prohibited on college property in academic buildings, administrative office buildings, student centers, child care centers, dining facilities and places of like kind where people congregate, or while attending any sporting, entertainment or educational events. Entry upon DCC property in violation of this prohibition is expressly forbidden. Any individual in violation of this prohibition will be asked to remove the weapon immediately. Failure to comply may result in a student conduct referral, an employee disciplinary action, or arrest.

Policy for the Prohibition of Sexual Misconduct, Sexual Violence, Domestic Violence and Stalking Sexual misconduct, sexual assault, sexual harassment and sexual violence are contrary to the policies of the State Board for Community Colleges and DCC. DCC shall not tolerate any verbal or physical conduct of this nature. As a recipient of federal funds, DCC is required to comply with Title IX of the Higher Education Amendments of 1972, 20 U.S.C. § 1681 et seq. (“Title IX”), which prohibits discrimination on the basis of sex in educational programs or activities, admission and employment. Under certain circumstances, sexual misconduct, sexual harassment, and similar conduct constitute sexual discrimination prohibited by Title IX. Inquiries concerning the application of Title IX may be referred to the college’s Title IX Coordinator or to the U.S. Department of Education’s Office for Civil Rights. DCC’s Title IX Coordinator is Cheryl Terry, whose office is located in Wyatt Room 213, and may be contacted by phone at 434.797.8524 or by email at titleix@danville.edu. The Deputy Title IX Coordinator is Howard Graves, whose office is located in Wyatt Building, Room 108, and may be
contacted by phone at 434.797.8443. All DCC students, employees and visitors to the campus are covered by this policy. The official college policy, incident report form and community resources are available on the DCC website at danville.edu/titleix.

In addition, college employees will receive annual training and/or resources to ensure that legal concepts associated with sexual misconduct, sexual assault, sexual harassment and sexual violence are understood; that instances of sexual misconduct, sexual assault, sexual harassment and sexual violence are promptly investigated and remediated; and that support services are available for complainants. The DCC Policy is not intended to substitute or supersede related criminal or civil law. Individuals should report incidents of sexual and domestic violence, dating violence, and stalking to law enforcement authorities. Criminal and civil remedies are available in addition to the potential remedies that the college may provide.

Notification of Student Rights
Each institution shall establish and publish information release policies that respect the rights of individual privacy, and the confidentiality of records, and the best interests of the student and institution. As provided by the Family Educational Rights and Privacy Act (FERPA), colleges may disclose the following Virginia Community College System directory information items without the student’s prior consent:

1. Student’s Name
2. Participation in officially-recognized activities and sports
3. Weight and height of members of athletic teams
4. Degrees, honors, and awards received
5. Major field of study
6. Dates of attendance
7. Grade level
8. The most recent educational agency or institution attended
9. Number of credit hours enrolled
10. Photos

Students must provide official notification to the Admissions Office to prevent the disclosure of directory information. Students having questions pertaining to FERPA may contact the Dean of Student Support Services.
Located in the EIT Building, the DCC bookstore offers a variety of products including books, school supplies, clothing, and computer items. Students can access course material information, including ISBN, prices, and the ability to order online, by visiting dccbookstore.danville.edu.

**Return and Refund Policy** Cash register receipts must be submitted for a refund for state audit purposes. All refunds are made by check and will be mailed within 4-6 weeks of the return date. New books and related materials must be in new, resalable condition to obtain a refund. Names should not be written in books, access codes (if any) cannot be opened or used. The bookstore is not responsible for lost receipts and a $5 fee will be charged for receipt copies.

Students are fully responsible for the cost of books and other items purchased using Financial Aid should they drop a class or withdraw from school altogether. Items should be returned promptly to the bookstore for a refund should this happen. All other terms provided in this Return Policy will apply.

**Textbooks** may be returned for a refund until the last day to drop classes with a full tuition refund. An official drop form or a revised class schedule along with the dated bookstore receipt is required.

**General books** such as trade paperbacks, hardcover fiction, and non-fiction are non-refundable.

**Calculators and Electronics:** Refunds on calculators are not available. Defective items are not replaced after 30 days of purchase. Merchandise must be returned with its carton, product materials (instructions, warranty, etc.) and the dated sales receipt. For defective merchandise purchased and held for more than 30 days, the manufacturer or local service outlet must be contacted directly.

**Computer software** in its original shrink-wrap and that is the current version may be returned within five days of the purchase date. There are no refunds on opened software. **General Merchandise** Merchandise other than the above is non-refundable. Defective items may be exchanged for like items.

**Used Books** The bookstore buys and resells used books to provide more reasonable prices for students. Buy-back dates are posted around the campus prior to each book-buy and usually coincide with the week of exams each semester. Used book purchases are based on the need for specific books.
**Developmental Studies**

**Award:** NONE

**Length:** Variable

**Purpose:** The Virginia Community College System (VCCS) requires that each campus assess student readiness for college-level work. Based on assessment outcomes, a student may be required to take developmental courses in mathematics, reading and writing. These courses do not carry college-level credit but are designed to develop essential skills necessary for college-level work. By obtaining these skills, students increase the likelihood of successful completion of their chosen program of study.

VCCS campuses currently use both the ASSET and COMPASS tests to assess incoming students who register for transfer or vocational degrees and certificates. Both tests are developed by American College Testing which ensures the validity and accuracy of their assessment tools. Students seeking additional information on these tests are invited to view ACT’s website at www.act.org. This site contains valuable information about the test, sample questions and tips for taking both the ASSET and COMPASS.

**Program Requirements:** All students are assigned to an academic advisor. College-level course enrollment requires advisor approval, and students must complete all developmental pre-requisites before taking college-level courses. Students requiring remediation are encouraged to complete Developmental Studies course requirements as early as possible in their college enrollment. When a student completes the required objectives for the Developmental Studies courses, a grade of “S” (satisfactory completion of objectives) is awarded. When a student makes satisfactory progress during the term but has not completed all of the requirements to pass the course, the student receives a grade of “R” (re-enroll) and should re-enroll in that Developmental Studies course during the subsequent term. When a Developmental Studies student receives the “U” (unsatisfactory) grade, that student is to be re-counseled by a Developmental Studies academic advisor with the assistance of the Counseling Office. For assessment and precise placement into math modules, contact the Student Success and Academic Advancement Division at 434.797.6435.

**Developmental Studies Prerequisites**

Curricular students should not enroll in the following courses until they have demonstrated proficiency on the placement examination or completed the appropriate developmental course. Note: “C” attached to a course number indicates it may be taken concurrently as a co-requisite.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
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<th>Course Name</th>
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<tbody>
<tr>
<td>ACC 105</td>
<td>Office Accounting (MTE 1, MTE 2, ENF 3)</td>
<td>ADJ 236</td>
<td>Principles of Criminal Investigation (MTE 1, MTE 2, ENF 3)</td>
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<tr>
<td>ACC 111</td>
<td>Accounting I (MTE 1, MTE 2, ENF 1C)</td>
<td>ADJ 257</td>
<td>Loss Prevention (ENF 3)</td>
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<td>ACC 211</td>
<td>Principles of Accounting I (MTE 1, MTE 2, MTE 3, ENF 1, ENF 2C)</td>
<td>ASL 100</td>
<td>American Sign Language I (ENF 3)</td>
</tr>
<tr>
<td>ARC 211</td>
<td>Computer-Aided Drafting Applications (MTE 1, MTE 2, MTE 3)</td>
<td>ASL 101</td>
<td>American Sign Language II (ENF 1C)</td>
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<tr>
<td>ARC 255</td>
<td>Construction Estimating (MTE 1, MTE 2, MTE 3)</td>
<td>AST 101</td>
<td>Keyboarding I (MTE 1, MTE 2, ENF 1C)</td>
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<tr>
<td>ADJ 100</td>
<td>Survey of Criminal Justice (ENF 2)</td>
<td>AST 113</td>
<td>Keyboarding for Speed and Accuracy (ENF 1C)</td>
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<tr>
<td>ADJ 116</td>
<td>Special Enforcement Topics (ENF 2)</td>
<td>AST 117</td>
<td>Keyboarding for Computer Usage (ENF 1C)</td>
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<tr>
<td>ADJ 130</td>
<td>Introduction to Criminal Law (MTE 1, MTE 2, ENF 2)</td>
<td>AST 201</td>
<td>Keyboarding III (ENF 1)</td>
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<tr>
<td>ADJ 131</td>
<td>Legal Evidence (MTE 1, MTE 2, ENF 3)</td>
<td>AST 234</td>
<td>Records and Database Management (MTE 1, MTE 2, ENF 1)</td>
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<tr>
<td>ADJ 140</td>
<td>Introduction to Corrections (ENF 2)</td>
<td>AST 238</td>
<td>Word Processing Advanced Operations (MTE 1, MTE 2, ENF 1)</td>
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<td>ADJ 145</td>
<td>Corrections and the Community (ENF 2)</td>
<td>AST 243</td>
<td>Office Administration I (ENF 1)</td>
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<tr>
<td>ADJ 150</td>
<td>Introduction to Security Administration (ENF 2)</td>
<td>AST 244</td>
<td>Office Administration II (ENF 1)</td>
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<td>ADJ 171</td>
<td>Forensic Science I (MTE 1, MTE 2, ENF 2)</td>
<td>AST 253</td>
<td>Advanced Desktop Publishing I (ENF 1)</td>
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<td>ADJ 215</td>
<td>Report Writing (ENF 3)</td>
<td>AST 265</td>
<td>Legal Office Procedures I (ENF 3)</td>
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<tr>
<td>ADJ 227</td>
<td>Constitutional Law for Justice Personnel (MTE 1, MTE 2, ENF 3)</td>
<td>BIO 100</td>
<td>Basic Human Biology (MTE 1, MTE 2, ENF 3C)</td>
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<td>BIO 101</td>
<td>General Biology I (MTE 1, MTE 2, MTE 3, MTE 4C, MTE 5C, ENF 3)</td>
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<td>BIO 102</td>
<td>General Biology II (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, ENF 3)</td>
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<tr>
<td>BIO 141</td>
<td>Human Biology and Physiology I (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>BIO 231</td>
<td>Human Anatomy and Physiology I (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5)</td>
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<td>BIO 232</td>
<td>Human Anatomy and Physiology II (MTE 1, MTE 2, MTE 3, MTE 4, MTE5)</td>
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<td>BLD 120</td>
<td>Applied Construction Mathematics (MTE 1, MTE 2)</td>
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<tr>
<td>BUS 100</td>
<td>Introduction to Business (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<tr>
<td>BUS 111</td>
<td>Principles of Supervision (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<tr>
<td>BUS 121</td>
<td>Business Mathematics I (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<tr>
<td>BUS 122</td>
<td>Business Mathematics II (MTE 1, MTE 2,)</td>
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<tr>
<td>BUS 125</td>
<td>Applied Business Mathematics (MTE 3, ENF 1, ENF 2C)</td>
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<tr>
<td>BUS 147</td>
<td>Introduction to Business Information Systems (MTE 1, MTE 2, MTE 3, ENF 1, ENF 2C)</td>
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<td>BUS 165</td>
<td>Small Business Management (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<tr>
<td>BUS 209</td>
<td>Continuous Quality Improvement (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<td>BUS 220</td>
<td>Introduction to Basic Statistics (MTE 1, MTE 2, ENF 1, ENF 2C)</td>
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<td>BUS 221</td>
<td>Business Statistics I (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9)</td>
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<td>BUS 223</td>
<td>Distribution and Transportation (MTE 1, MTE 2)</td>
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<td>BUS 227</td>
<td>Quantitative Methods (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9)</td>
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<td>BUS 241</td>
<td>Business Law I (ENF 1)</td>
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<td>BUS 255</td>
<td>Inventory and Warehouse Management (MTE 1, MTE 2)</td>
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<td>BUS 298</td>
<td>Seminar and Project in Business (MTE 1, MTE 2)</td>
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<td>CAD 116</td>
<td>Drafting III (MTE 1, MTE 2, MTE 3, ENF 1)</td>
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<td>CAD 120</td>
<td>Introduction to Graphic Representation (MTE 1, MTE 2, MTE 3, MTE 4, ENF 1)</td>
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<td>CAD 130</td>
<td>Introduction to Electrical/Electronics Drafting (MTE 1, MTE 2, MTE 3, MTE 4, ENF 1)</td>
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<td>CAD 200</td>
<td>Survey of Computer-Aided Drafting (MTE 1, MTE 2, MTE 3)</td>
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<td>CAD 201</td>
<td>Computer Aided Drafting and Design (MTE 1, MTE 2, MTE 3, ENF 1)</td>
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<td>CAD 233</td>
<td>Computer Aided Drafting III (MTE 1, MTE 2, MTE 3)</td>
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<td>CHD 118</td>
<td>Language Arts for Young Children (ENF 2)</td>
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<td>CHD 120</td>
<td>Introduction to Early Childhood Education (ENF 2)</td>
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<td>CHD 145</td>
<td>Teaching Art, Music, and Movement to Children (ENF 2)</td>
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<td>CHD 146</td>
<td>Science and Math Concepts for Children (MTE 1, MTE 2)</td>
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<td>CHD 166</td>
<td>Infant and Toddler Programs (ENF 2)</td>
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<td>CHD 167</td>
<td>CDA Theories and Applications: Portfolio (ENF 2)</td>
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<td>CHD 205</td>
<td>Guiding the Behavior of Children (MTE 1, MTE 2, ENF 2 or higher)</td>
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<td>CHM 101</td>
<td>General Chemistry I (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>CHM 102</td>
<td>General Chemistry II (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>CHM 111</td>
<td>College Chemistry I (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>CHM 112</td>
<td>College Chemistry II (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, ENF 3)</td>
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<td>CIV 171</td>
<td>Principles of Surveying (MTE 1, MTE 2, MTE 3, MTE 4, ENF 2)</td>
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<td>CSC 200</td>
<td>Introduction to Computer Science (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, ENF 3)</td>
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<td>CSC 205</td>
<td>Computer Organization (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9, ENF 3)</td>
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<td>CST 100</td>
<td>Principles of Public Speaking (ENF 2)</td>
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<td>CST 110</td>
<td>Introduction to Speech Communication (ENF 2)</td>
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<td>CST 131</td>
<td>Acting I (ENF 3)</td>
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<td>DRF 114</td>
<td>Drafting I (MTE 1, MTE 2)</td>
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<td>DRF 115</td>
<td>Drafting II (MTE 1, MTE 2)</td>
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<td>DRF 160</td>
<td>Machine Blueprint Reading (MTE 1, MTE 2, ENF 1)</td>
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<td>ECO 201</td>
<td>Principles of Macroeconomics (MTE 1, MTE 2, MTE 3, MTE 4, ENF 1, ENF 2C)</td>
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<td>ECO 202</td>
<td>Principles of Microeconomics (MTE 1, MTE 2, MTE 3, MTE 4, ENF 1, ENF 2)</td>
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<td>EGR 115</td>
<td>Engineering Graphics (MTE 1, MTE 2, MTE 3)</td>
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<td>ENG 100</td>
<td>Basic Occupational Communication or Higher (ENF 3C)</td>
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<td>Machine Shop II (MTE 1, MTE 2)</td>
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<td>Introductory Machining Techniques (MTE 1, MTE 2)</td>
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<td>MAC 121</td>
<td>Computer Numerical Control I (MTE 1, MTE 2)</td>
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<td>Introductory CNC Programming (MTE 1, MTE 2)</td>
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<td>Machine Lab (MTE 1, MTE 2)</td>
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<td>Machine Shop Practices I (MTE 1, MTE 2)</td>
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<td>MAC 162</td>
<td>Machine Shop Practices II (MTE 1, MTE 2)</td>
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<td>Machine Shop Practices III (MTE 1, MTE2)</td>
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<td>Machine Shop Practices IV (MTE 1, MTE 2)</td>
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<td>Computer Programming for Technologists (MTE 2, MTE 3)</td>
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<td>Mechanics II – Strengths of Materials for Engineering Technology (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9)</td>
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<td>Practical Metallurgy (MTE 2, ENF 1)</td>
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<td>Promotion (BSK 1, MTE 1, MTE 2)</td>
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<td>MKT 281</td>
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<td>Technical Mathematics II (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7)</td>
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<td>MTH 117</td>
<td>Calculus with Analytic Geometry I (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9, ENF 3)</td>
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<td>MTH 157</td>
<td>Calculus of One Variable (MTE 1, MTE 2, MTE 3, MTE 4, MTE 5, MTE 6, MTE 7, MTE 8, MTE 9)</td>
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<td>Music Appreciation I (ENF 3)</td>
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<td>Class Voice I (ENF 3C)</td>
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<td>Elementary Physical Science (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>Microbiology (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>PL 212</td>
<td>U. S. Government II (MTE 1, MTE 2, ENF 3)</td>
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<td>PSY 126</td>
<td>Psychology for Business and Industry (ENF 2C)</td>
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<td>Principles of Psychology (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>Introduction to Psychology I (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>PSY 202</td>
<td>Introduction to Psychology II (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>Life Span Human Development I (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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<td>Child Psychology (MTE 1, MTE 2, MTE 3, ENF 3)</td>
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### Passport College Transfer Courses

The Passport consists of 16 credit hours that are guaranteed to transfer as either a general education requirement or elective to public four-year colleges and universities in Virginia, including many private institutions. Passport courses may satisfy a general education requirement without having a specific course equivalent at the receiving institution.

All of the listed courses are guaranteed to transfer as general education credits.

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<td>Sociology of the Family (ENF 3)</td>
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<td>SOC 235</td>
<td>Juvenile Delinquency (ENF 2C)</td>
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<td>SOC 202</td>
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<td>SOC 236</td>
<td>Criminology (ENG 1, ENF 2)</td>
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<td>SOC 210</td>
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<td>Social Problems (ENF 3)</td>
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The Passport consists of 16 credit hours that are guaranteed to transfer as either a general education requirement or elective to public four-year colleges and universities in Virginia, including many private institutions. Passport courses may satisfy a general education requirement without having a specific course equivalent at the receiving institution.

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<td>College Composition I</td>
<td>BIO 101</td>
<td>General Biology I</td>
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<td>ART 101</td>
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<td>CHM 101</td>
<td>Introductory Chemistry I</td>
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<td>ART 102</td>
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<td>General Chemistry I</td>
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<td>History of World Civilization I</td>
<td>MTH 161/162</td>
<td>PreCalculus I/PreCalculus II*</td>
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<td>History of World Civilization II</td>
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<td>PreCalculus with Trigonometry*</td>
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<td>Statistics I</td>
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<td>MTH 263/264</td>
<td>Calculus I/Calculus II</td>
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<td>SOC 211</td>
<td>Principles of Anthropology I</td>
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</table>

1 Not accepted at James Madison University or William and Mary
2 Not accepted at Christopher Newport University

* MTH 161/162 and 167 should only be taken by students preparing for calculus or for four-year degree programs that require study in College Algebra/PreCalc. Precalculus may not satisfy general education and may not receive transfer credit.
### Programs of Study (Alphabetical by Credential Type)

**Associate of Arts & Sciences (A.A. & S.)**
- Business Administration
- Liberal Arts
- Liberal Arts — Humanities Specialization
- Liberal Arts — Social Science Specialization
- Science
- Science — Computer Science Specialization

**Associate of Science Engineering**

**Associate of Applied Science (A.A.S.)**
- Administration of Justice — Law Enforcement Specialization
- Administrative Support Technology — Medical Office Administration Specialization
- Administrative Support Technology — General Office Specialization
- Administrative Support Technology — Medical Office Coding Specialization
- Business Management — Automotive Management Specialization
- Business Management — Management Specialization
- Business Management Project Management Specialization
- Business Management — Graphic Imaging Management Specialization
- Dental Hygiene
- Early Childhood Education
- Health Science — Practical Nursing Specialization
- Information Systems Technology Network Engineer
- Information Systems Technology Network Engineer — Cyber and Network Security Specialization
- Information Systems Technology — Gaming and Mobile Application Design Specialization
- Information Systems Technology — Software Development

**Diplomas**
- Air Conditioning and Refrigeration
- Automotive Analysis and Repair
- Electrical/Electronics Engineering Technology
- Electrical/Electronics Equipment Servicing
- Graphic Imaging Technology
- Precision Machining Technology
- Welding

**Certificates**
- Air Conditioning and Refrigeration Servicing
- Cyber Security
- Cybercrime Investigation
- General Education
- Industrial Electrical Principles
- Industrial Electronic Principles
- Law Enforcement
- Maintenance Mechanics
- Office Information Processing
- Welding Technology

**Career Studies Certificates**
- Advanced Database Development
- Advanced Early Childhood Development*
- Automotive Analysis and Repair Fundamentals

**Basic Dental Assisting**
**Basic Welding**
**CNC Field Service Technician:**
- Electrical CSC*
- CNC Flow Cell Machining†
**Commercial Art**
**Cosmetology**
**Cyber Security Technician**
**Cybersecurity and Networking Fundations***
**Desktop Applications**
**Digital Art and Design**
**Digital Drawing and Illustration***
**Digital Imaging and Photography**
**Dimensional Inspection**
**Early Childhood Development**
**Electrical Concepts**
**Electronic Concepts**
**Emergency Medical Services**
**Factory Automation and Robotics**
**Foundations of Criminal Justice***
**General Office Studies**
**Graphic Communications**
**Information Systems Data Analyst**
**Information Systems Management**
**Information Systems Technician**
**Information Technology Support Specialist**
**Logistics Management**
**Machining Skills**
**Manufacturing Technician**
**Medical Coding**
**Medical Office Studies**
**Metal Processing**
**Mobile Application Development**
**Network Technology**
**Network Virtualization Technologies**
**Networking Technology Fundamentals**
**Networking with CISCO**
**Nurse Aide Extended Care**
**Pharmacy Technician**
**Phlebotomy**
**Pre-Allied Health Nurse Aide***
**Printing Technology**
**Project Management**
**Quality Control***
**Small Business Management**
**Small Unmanned Aircraft Systems (sUAS)**
**Software Development**
**Website Design**
**Website Programming**

*pending approval  †Capstone Program
Get qualified for hot jobs in weeks or months, not years! DCC’s short-term career training options range from 6 weeks to 10 months*:

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<th>Duration</th>
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<td>6 weeks</td>
<td>Truck Driving</td>
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<tr>
<td>10 weeks</td>
<td>Nurse Aide - Extended Care, Manufacturing Technician</td>
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<tr>
<td>4 months</td>
<td>Logistics Management, Phlebotomy, Project Management, Welding</td>
</tr>
<tr>
<td>7 months</td>
<td>CNC Flow Cell Machining</td>
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<tr>
<td>9 months</td>
<td>Dimensional Inspection (Metrology)</td>
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<tr>
<td>10 months or less</td>
<td>Basic Dental Assisting, Cyber Security Technician, Digital Art &amp; Design, Early Childhood Development</td>
</tr>
<tr>
<td>7 months</td>
<td>Electrical/Electronic Concepts, IT Support Specialist</td>
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<tr>
<td>9 months</td>
<td>Law Enforcement (certificate), Mobile App Development, Networking</td>
</tr>
<tr>
<td>10 months or less</td>
<td>Pharmacy Technician, Printing Technology, Small Business Management, Website Design, Website Programming</td>
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*Note: These times are only estimates, based on course enrollment minimums, etc.

### Online/Distance Learning Programs

**Short-term programs**
- Cybercrime Investigation (Certificate)
- Cyber Security (Certificate)
- Logistics Management (CSC) - self-paced!
- Networking with Cisco (CSC)
- Project Management (CSC) - self-paced!
- Software Development (CSC)

**Associate degrees**
- Administration of Justice
- Business Management
- IST - Gaming & Mobile Applications
- Liberal Arts

*Note: Some science requirements may not be available online.*

### Advanced Programs

These programs may require prior education or work experience relevant to the field. Enrollment eligibility may be determined by the instructor/program coordinator.

- Advanced Database Development (CSC)
- CNC Flow Cell Machining (CSC)
- Cyber Crime Investigation (Certificate)
- Cyber Security (Certificate)
- Cyber Security Technician (CSC)
- Information Technology Support Specialist (CSC)
- Logistics Management (CSC)
- Network Virtualization Technologies (CSC)
- Project Management (CSC)
How to use this section:
Each program listing contains basic information to help you decide if it’s the right fit for you. This may include:

• **Length of Program:** The intended length of time to completion, based on whether the program is designed to be full- or part-time. Most program lengths are based upon a full-time course load as outlined in the catalog course sequence. If this sequence is not followed, the program may take longer.

Upon applying to DCC, your academic strengths and weaknesses will be evaluated with a counselor; any weaknesses in your academic history may require developmental courses, which are not included in the program credit totals. Developmental courses or additional prerequisites will add length to the program.

• **Industry Credentials or Certifications (if applicable):** Some - not all - programs are intended to prepare graduates to sit for third-party, industry-recognized examinations which may result in national certifications. These certifications may aid in obtaining employment.

• **Career Opportunities or Transfer Opportunities:** Most programs are meant to either prepare graduates for immediate employment in their field, or else transfer to a four-year college or university to earn further qualifications.

• **Career Information:** Where applicable, programs list potential careers, salaries, and projected growth of the field for graduates of the program. This information is taken from national employment data and projections from the Bureau of Labor Statistics Occupational Outlook Handbook; it is intended as a guide, and is not a guarantee of employment or wages. Wages and available job opportunities will vary based on location, field of study, and qualifications of the applicant.

• **Transfer Information:** For programs intended to culminate in a bachelor’s degree, DCC has **guaranteed admission** or articulation agreements with **40+ colleges and universities** for graduates who meet certain guidelines. Typically, this means a student who earns an eligible DCC transfer degree with a particular grade-point average will be automatically admitted to the college/university with full third-year status. **NOTE: Admission to a given institution does not guarantee admission to a particular degree program, major, or field of concentration.**

• Transfer students can save **$15,000** or more on tuition and fees by completing an associate degree at DCC and then transferring to an in-state public institution - with even greater cost savings compared to a private or out-of-state school!
Advanced Manufacturing in the United States has changed dramatically. Today's workers require high-tech precision machining skills to operate leading-edge technology in clean, well-lit manufacturing environments. DCC graduates enjoy high job placement rates at companies both locally and nationally. Programs range from seven months to two years.

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNC Field Service Technician: Electrical (CSC)*</td>
<td>51</td>
</tr>
<tr>
<td>CNC Flow Cell Machining (CSC)*</td>
<td>52</td>
</tr>
<tr>
<td>Dimensional Inspection (CSC)</td>
<td>53</td>
</tr>
<tr>
<td>Machining Skills (CSC)</td>
<td>54</td>
</tr>
<tr>
<td>Maintenance Mechanics (CERT)</td>
<td>55</td>
</tr>
<tr>
<td>Manufacturing Technician (CSC)</td>
<td>56</td>
</tr>
<tr>
<td>Precision Machining Technology (DIPL)</td>
<td>57</td>
</tr>
<tr>
<td>Quality Control</td>
<td>59</td>
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<tr>
<td>Technical Studies Automation and Robotics (AAS)</td>
<td>60</td>
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<tr>
<td>Technical Studies Industrial Technician - Electrical (AAS)</td>
<td>61</td>
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<tr>
<td>Technical Studies Industrial Technician - Mechanical (AAS)</td>
<td>62</td>
</tr>
<tr>
<td>Technical Studies Integrated Machining Technology (AAS)</td>
<td>63</td>
</tr>
</tbody>
</table>

*Capstone Program available to Technical Studies Integrated Machining Technology AAS students only.

For more information, visit [www.machiningindanville.com](http://www.machiningindanville.com).
Award: Career Studies Certificate

Plan Code: 221-938-05

CIP Code: 47.0105

Description: This program will prepare students for introductory level CNC electrical diagnostic and repair work. This program is designed for someone with in-depth CNC experience.

Career Opportunity: This 6 course, 17 credit CNC Field Technician electrical program is designed for someone with previous CNC experience interested in working in field service. This program will teach students electrical diagnostic and repair skills, along with essential machine tool calibration procedures. Careers in CNC Field Service repair have an average salary of $64,330. The field is projected to grow by 2.7% over the next 10 years. (BLS.gov)

Length: One semester

Admission Requirements: Completion of the Integrated Machining Technology program or equivalent work experience

Program Outcomes: Graduates of this program will be able to:
1. Recognize the characteristics and theories of the operation of AC/DC power.
2. Utilize the fundamental concepts of electricity to safely work as a CNC Field Technician.
3. Demonstrate skills in single and three phase power distribution.
4. Demonstrate diagnostic skills for electrical control systems.
5. Demonstrate diagnostic skills for motor protection drives.
6. Troubleshoot and solve problems associated with electronic motor drive systems.
7. Demonstrate set up and operation of five axis mills and three axis lathes.
8. Demonstrate the ability to ball bar test.
9. Demonstrate the industry standard for macro programming in relation to machine tool probes.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE 115</td>
<td>Basic Electricity</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>3</td>
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<tr>
<td>ELE 147</td>
<td>Electrical Power and Controls</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>ETR 246</td>
<td>Electric Motor Drive Systems</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>MAC 256</td>
<td>Multi Axis Machine Tool Set-up</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>MAC 254</td>
<td>Flow Cell IT Integration</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>ENG 131</td>
<td>Technical Report Writing</td>
<td>3</td>
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<td>17</td>
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</tbody>
</table>

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
CNC FLOW CELL MACHINING G3

Award: Career Studies Certificate

Plan Code: 221-736-06

CIP Code: 48.0599

This program prepares students with prior machining experience for higher-level machinist or entry-level manager positions. Topics include advanced-level CNC training, CAD/CAM, and inspection training, as well as dimensional metrology and advanced tooling applications.

Admission Requirements: In addition to general college admission requirements, students must:
1. Complete MAC 223 and MAC 127 (or equivalents) with a C or higher.
2. Have completed a two-year precision machining program or have equivalent work experience, as evaluated by program instructors.

Program Outcomes: Graduates will be able to:
1. Act as high-performance team members and cultivate knowledge required of mid-level machinists or entry-level managers.
2. Apply the concepts of Lean and Six Sigma.
3. Gain an understanding of basic economic principles as they apply to industry and the impact of those principles to manufacturing.
4. Work with a wide range of high-performance machine tools, including 5-axis mills, 3-axis lathes, CNC inner diameter and outer diameter surface grinders, and electrical discharge machining.
5. Learn the ancillary processes associated with machining in a high-precision environment.

Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IND 123 Intro to Lean Manufacturing &amp; Six Sigma</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
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<tr>
<td>IND 138 Industrial Leadership &amp; Career Development</td>
<td>1</td>
<td>0</td>
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<tr>
<td>MAC 108 Computer Numerically Controlled Grinding</td>
<td>1</td>
<td>3</td>
<td>4</td>
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<tr>
<td>MAC 130 Intro to Electric Discharge Machining (EDM)</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
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<tr>
<td>MAC 253 Advanced CMM Operation &amp; Programming</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>3</td>
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<tr>
<td>MAC 251 Advanced CAM Modeling &amp; Simulation</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>MAC 256 Multi-Axis Machine Tool Set-up, Programming and Operation</td>
<td>1</td>
<td>6</td>
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<tr>
<td>MAC 224 Advanced Tooling Applications</td>
<td>2</td>
<td>3</td>
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<tr>
<td>MAC 255 Intro to Supply Chain Strategies for Industry</td>
<td>1</td>
<td>6</td>
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<tr>
<td>MAC 258 Tool Inspection, Validation, &amp; Presetting</td>
<td>1</td>
<td>3</td>
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<tr>
<td>MAC 254 Machining Flow Cell IT Integration</td>
<td>1</td>
<td>3</td>
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<tr>
<td>MAC 257 Capstone: Precision Machining Flow Cell</td>
<td>1</td>
<td>9</td>
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<td><strong>45</strong></td>
<td><strong>59</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

G3*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

PROGRAM INFO

A specialized third-year advanced manufacturing program conducted in a high-precision CNC manufacturing cell. The program is a partnership between DCC and the Institute for Advanced Learning & Research.

Minimum credits: 29

Length: 7 months

Career opportunities:
- CNC Programmer: $48,990
  Job growth: 19%
  from 2014-2024
- Machinists, Tool & Die Makers: $43,160
  Job growth: 6%

*Median salaries nationwide as of 2018
Source: BLS.gov

Division: Workforce Services (Haas Center)

Contact: 434.766.6607
Advanced Manufacturing Technology • 53

DIMENSIONAL INSPECTION (METROLOGY)G3

Award: Career Studies Certificate

Plan Code: 221-883-12   CIP Code: 15.0699

Students will acquire skills such as blueprint reading, part inspection, coordinate measuring machine (CMM) operation and programming, and geometrical dimensioning and tolerancing. With the use of precise inspection equipment, students will verify part quality and document results for quality control.

Program Outcomes: Graduates of this program will be able to:
1. Qualify for careers in a precision inspection environment.
2. Accurately inspect precision components based on geometrical dimensioning and tolerancing principles.
3. Operate and program coordinate measuring machines.
4. Accurately and consistently conduct precision bench inspections.

Industry Certifications: NNIMS – Measurement, Materials and Safety, Mitutoyo – MCOSMOS C1, Mitutoyo – MCOSMOS C2, American Society of Quality – Certified Six Sigma Yellow Belt, Certified Quality Inspector

Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 111 Basic Technical Mathematics</td>
<td>3</td>
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<tr>
<td>DRF 160 Machine Blueprint Reading</td>
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<tr>
<td>IND 145 Introduction to Metrology</td>
<td>2</td>
<td>2</td>
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<td>3</td>
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<tr>
<td>MAC 125 Intro to Geometrical Dimensioning &amp; Tolerancing in Machining</td>
<td>3</td>
<td>0</td>
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<tr>
<td>MAC 211 Dimensional Inspection I</td>
<td>1</td>
<td>6</td>
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<tr>
<td>ITE 145 Microcomputer Software: Spreadsheets</td>
<td>1</td>
<td>0</td>
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<tr>
<td>IND 123 Intro to Lean Manufacturing and Six Sigma</td>
<td>1</td>
<td>0</td>
<td>1</td>
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<tr>
<td>IND 140 Quality Control</td>
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<td>0</td>
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<tr>
<td>MAC 212 Dimensional Inspection II</td>
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<tr>
<td>MAC 134 CMM Operation &amp; Programming</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>MAC 218 Intermediate CMM Operation &amp; Programming</td>
<td>1</td>
<td>3</td>
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<td>MAC 253 Advanced CMM Operation and Programming</td>
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<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>22</strong></td>
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<td><strong>45</strong></td>
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</tr>
</tbody>
</table>

G3Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

PROGRAM INFO

This program prepares students for employment as specialized quality inspectors in a high-precision manufacturing environment. Classes take place in well-lit, clean, and climate-controlled labs within the state-of-the-art Gene Haas Center for Integrated Machining.

Minimum credits: 29

Career opportunities:
Quality Control Inspector: $45,000
Calibration Technician: $53,000

Source: ASQ Quality Progress salary survey.

Division: Workforce Services (Haas Center)

Contact: 434.766.6607

Visit www.machiningindanville.com for more information.
MAC HINING SKILLS

Award: Career Studies Certificate

Plan Code: 221-883-10

CIP Code: 15.0699

Purpose: The purpose of the Machining Skills CSC Program is to help entry-level employees in the precision machining related trades to obtain skills with emphasis on manual lathe and mill work. This also includes beginning CNC lathe work with some programming knowledge.

Completers will have entry level skills in the following occupational areas: Manual Lathe Machinist, Manual Mill Machinist, CNC Lathe Operator, CNC Mill Operator.

Occupational Objective: Graduates of this program will have:
- Basic occupational skills for the Precision Machining professions.
- Basic skills and understanding of manual lathe and mill systems and terminology.
- Basic skills and understanding of CNC Lathe systems and terminology.
- Knowledge of safety requirements for machining trade occupations.
- Occupational preparation skills for employment.

Industrial Credentials: Students will have an opportunity to earn:
- NIMS Measurement, Material, and Safety
- NIMS Turning Operations

Admission Requirements: Entry into this curriculum may be attained by meeting the general admission requirements established for the College.

Program Description: The program is designed to develop a general foundation in Precision Machining trades with an emphasis on manual lathe, mill, and CNC lathe.

Feeder Program: This certificate feeds into Precision Machining Technology, and Integrated Machining Technology.

Instructional Delivery: Instruction is delivered thru traditional classroom along with a heavy emphasis on lab projects.

Program Outcomes: Graduates of the Machining Skills Certificate will be able to:
- Understand precision machining tools, terminology and systems
- Interpret blueprints, drawings, and symbols
- Use various measuring tools and equipment
- Know and apply safety requirements for machining trades

Program Requirements: To be awarded a Career Studies Certificate the student must complete all requirements and successfully complete the program as follows:

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MAC 101 Machine Shop I</td>
<td>5</td>
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<tr>
<td>MAC 102 Machine Shop II</td>
<td>4</td>
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<td>13</td>
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<tr>
<td>MAC 121 Numerical Control I</td>
<td>2</td>
<td>2</td>
<td>5</td>
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<tr>
<td>MAC 221 Advanced Machine Tool Operations I</td>
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<tr>
<td>MAC 127 Advanced CNC Programming</td>
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<td><strong>28</strong></td>
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</table>

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
This program prepares graduates for entry-level careers in industrial maintenance. To find employment, applicants generally must be able to physically lift 50 lbs, have good hand dexterity, and the ability to crawl into cramped spaces.

Program Outcomes Graduates of this program will demonstrate:
1. Competency in reading & basic drawings & symbols.
2. Ability to stick weld & choose & use basic welding tools/materials.
3. Wire basic electrical circuits & understand basic wiring symbols.
4. Troubleshoot basic control circuits.
5. Troubleshoot & repair basic mechanical & electrical equipment.

Course Sequence

**FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course</th>
<th>Lectures</th>
<th>Lab</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ETR 115</td>
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</tr>
<tr>
<td>ITE 116</td>
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<td>MTH 111</td>
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<td>MEC 154</td>
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**SECOND SEMESTER**

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<th>Course</th>
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<th>Lab</th>
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<tbody>
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<td>ELE 147</td>
<td>2</td>
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<tr>
<td>IND 103</td>
<td>2</td>
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<td>ITE 131</td>
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<td>MEC 162</td>
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<td>WEL 120</td>
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**THIRD SEMESTER**

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<th>Course</th>
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<tr>
<td>ELE 233</td>
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<td>IND 243</td>
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<td>ENG 131</td>
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<td>PSY 126</td>
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<td><strong>5</strong></td>
<td><strong>15</strong></td>
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Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

**PROGRAM INFO**

<table>
<thead>
<tr>
<th>Minimum credits: 36</th>
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<tbody>
<tr>
<td>Length: 3 semesters</td>
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<tr>
<td>Career opportunities:</td>
</tr>
<tr>
<td>Industrial Mechanic or Mechanic’s Helper: $24,960-48,410</td>
</tr>
<tr>
<td>Job growth: 16% from 2014 to 2024</td>
</tr>
</tbody>
</table>

*Median salaries & job growth nationwide as of 2018. BLS.gov*

**Industry Certifications:**
- OSHA 10

**Division:** Workforce Services

**Contact:** 434.797.6437
MANUFACTURING TECHNICIAN G3

Award: Career Studies Certificate

Plan Code: 221-990-50    CIP Code: 15.0699

Created in response to demand from local industry employers, this program prepares participants for various manufacturing jobs requiring advanced technical and operator skills, plus knowledge of modern advanced manufacturing practices.

Program Outcomes: Graduates of this program will demonstrate:
1. Knowledge of how modern manufacturers use people, technologies & materials to make highly engineered products at a competitive cost.
2. Ability to communicate manufacturing concepts and ideas effectively.
3. Knowledge of basic automation and how technology is used by manufacturers in a modern factory.
4. Use of Lean Manufacturing in a manufacturing environment.
5. Application of skills learned in social, business and work ethics required by modern manufacturing.

Industry Certifications: National Career Readiness Certification (NCRC), Bennett Mechanical Score, OSHA 10, Manufacturing Specialist (MS) from Manufacturing Skills Institute.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<td>Workplace Ethics</td>
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<td>IND 137</td>
<td>Team Concepts &amp; Problem-Solving</td>
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<tr>
<td>IND 181</td>
<td>World Class Manufacturing</td>
<td>3</td>
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<td>IND 195</td>
<td>Applications in Factory Automation</td>
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<td>ITE 116</td>
<td>Survey of Computer Software Applications &amp; Concepts</td>
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<td>AST 55</td>
<td>Certification Preparation</td>
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<td>ELE 147</td>
<td>Electrical Power &amp; Control Systems</td>
<td>2</td>
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</table>

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*

PROGRAM INFO

Minimum credits: 28

Length: 1-2 semesters

Career opportunities:
Manufacturing Technician: $30,930

*Median salaries nationwide as of 2015. Source: BLS.gov

Division: Workforce Services

Contact: 434.797.6437
This program prepares graduates for careers as skilled machinists. Coursework includes the care and use of tools and machines, working to proper tolerances, technical drafting, computer numerical control programming, CAD-CAM training, metallurgy, tool making, jig & fixture design, precision measurements, and leadership development.

Program Outcomes: Graduates of this program will demonstrate competency in the following:
1. Ability to operate machine shop equipment: Lathes, mills, grinders, and drills.
2. Ability to read and interpret blueprints per industry standards.
3. Ability to process and plan a piece part through the lab until completion.
4. CNC machine tool operation and programming.
5. CAM design and manufacturing.

Industry Certifications: NIMS

Program Integration: Graduates may continue into the third-year capstone program in CNC Flow Cell at the Gene Haas Center for Integrated Machining in order to qualify for higher-level and management positions in the field.
### SECOND SEMESTER

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<td>MAC 102</td>
<td>Machine Shop II</td>
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<td>MAC 121</td>
<td>Numerical Control I</td>
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<td>MAC 116</td>
<td>Machinist Handbook</td>
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<td>ITE 116</td>
<td>Survey of Computer Software Applications &amp; Concepts</td>
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<td>Industrial Safety - OSHA 10</td>
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### THIRD SEMESTER (SUMMER TERM)

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<td>Standards, Measurements &amp; Calculations</td>
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<td>MAC 134</td>
<td>CMM Operation and Programming</td>
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<td>MAC 150</td>
<td>Intro to Computer-Aided Manufacturing</td>
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<td>CST 100</td>
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Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Award: Career Studies Certificate

Length: A student may complete this program in 1 to 2 semesters

Purpose: The Quality Control program prepares individuals to apply basic quality knowledge in manufacturing settings who do not require an in-depth dimensional metrology skillset. This 100% online program will also allow students, such as active military personnel, to complete a significant portion of the Dimensional Inspection CSC off campus, reducing the on-campus time required to achieve the Dimensional Inspection CSC.

Admission Requirements: Entry into this curriculum may be attained by meeting the general admission requirements established for the college. Students in this program may be eligible to receive credit for prior learning or industry certifications. See an academic advisor for further details.

Program Description: The program is designed to develop a general foundation of knowledge in quality control occupations. Students will also be given an introduction to industrial safety, and will have completed the non-lab heavy metrology courses needed to complete the Dimensional Inspection CSC.

The Quality Control program prepares individuals to examine products and materials for defects or deviations from specifications that do not require significant dimensional analysis. Quality Control inspectors monitor quality standards for nearly all manufactured products, including foods, textiles, clothing, glassware, motor vehicles, electronic components, and plastics to name a few.

Program Outcomes: Graduates of the Quality Control program will be able to:
1. Solve shop math problems.
2. Interpret blueprint readings with and without GD&T.
3. Use basic hand-measurement tools such as calipers and micrometers.
4. Apply basic quality concepts including lean and six sigma basics.

Industry Based Certifications may include:
• American Society of Quality – Certified Six Sigma Yellow Belt
• OSHA 10

Program Requirements: To be awarded this Career Studies Certificate the student must complete all requirements and successfully complete the program as follows:

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Lab Hours</th>
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*Pending approval

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
## Technical Studies Automation and Robotics

**Award:** Associate of Applied Science

**Plan Code:** 718-12  **CIP Code:** 15.0407

**Length:** A full-time student may complete this program in four semesters.

**Admission Requirements:** Students must meet the general admission requirements of the college. All students who are not proficient in communication and computation skills will be required to correct deficiencies through developmental courses.

**Program Description:** The program includes four educational components: general education, technical foundations, content skills and knowledge, and work-based learning. The content skills and knowledge and work-based learning components are specific to the field of Automation/Robotics. This includes the installation, configuration, programming, and troubleshooting of Automation/Robotic systems.

**Program Requirements:** To receive the Associate of Applied Science Degree in Automation/Robotics-Technical Studies, you must complete a minimum of 66 credits with a grade point average of 2.0 or better.

**Program Outcomes:** Graduates of the Automation/Robotics-Technical Studies Program will:

1. Demonstrate the knowledge gained in how modern manufacturers use Automation/Robotics in manufacturing.
2. Demonstrate the ability to communicate Automation/Robotics concepts effectively.
3. Demonstrate analytical ability to effectively perform manufacturing systems troubleshooting.
4. Demonstrate the proper use of tools and test equipment used with Automation/Robotics.
5. Demonstrate the proper safety procedures when working with or near Automation/Robotic systems.

### Course Sequence

<table>
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<tr>
<th>Course Sequence</th>
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<th>Lab Hours</th>
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<td>ELE 237 - Human Machine Interface Systems</td>
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<td>ETR 180 - Industrial Ethernet Networking</td>
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<td>ETR 246 Electronic Motor Drives Systems</td>
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**Program Info**

- **Minimum credits:** 69
- **Length:** 4 Semesters
- **Career opportunities:**
  - **Robotics Technician:** $57,790
  - **Job growth:** 4% from 2014-2024
- **Division:** Workforce Services (RCATT)
- **Contact:** 434.797.8430

*Median salaries nationwide as of 2018
Source: BLS.gov*
This program prepares students for employment as industrial electrical technicians or supervisors. To find employment, applicants generally must be able to physically lift 50 lbs, have good hand dexterity, and the ability to crawl into cramped spaces.

**Program Outcomes:** Graduates will demonstrate the ability to:
1. Read basic drawings & symbols.
2. Stick weld & choose & use basic welding tools/materials.
3. Wire basic electrical circuits & understand basic wiring symbols.
4. Troubleshoot basic control circuits.
5. Troubleshoot & repair basic mechanical & electrical equipment.

Note: Students will select a mechanical or electrical pathway. The courses are the same for the first two semesters.

**Course Sequence**

### GENERAL EDUCATION
- **ENG 111** English Composition: 3 0 3 3
- **HUM 165** Controversial Issues: 3 0 3 3
- **PSY 126** Psychology for Business and Industry: 3 0 3 3
- **ECO 120** Survey of Economics: 3 0 3 3
- **MTH 111** Basic Technical Mathematics: 3 0 3 3
- **HLT 116** Intro to Personal Wellness Concept: 3 0 3 3
- **SDV 100** College Success Skills: 1 0 1 1

Total: 19

### TECHNICAL FOUNDATIONS
- **ITE 115** Intro to Computer Applications and Concept: 3 0 3 3
- **IND 243** Principles and Applications of Mechatronic: 2 2 4 3
- **ENG 131** Technical Report Writing or **ENG 115** Technical Writing: 3 0 3 3
- **IND 137** Team Concepts and Problem Solving: 3 0 3 3
- **IND 181** World Class Manufacturing: 3 0 3 3
- **DRF 175** Schematics and Mechanical Diagrams: 2 0 2 2
- **SAF 130** Industrial Safety: 1 0 1 1
- **IND 103** Industrial Methods: 2 0 2 2

Total: 20

### CONTENT, SKILLS AND KNOWLEDGE
- **MEC 154** Mechanical Maintenance I: 2 2 4 3
- **MEC 162** Applied Hydraulics and Pneumatics: 2 3 5 3
- **ETR 115** DC / AC Fundamentals: 3 0 3 3
- **ELE 147** Electrical Power and Controls Systems I: 3
- **ELE 233** Programmable Logic Controller Systems I: 2 3 5 3
- **ELE 234** Programmable Logic Controller Systems II: 2 3 5 3
- **ELE 246** Electronic Motor Drives: 2 2 4 3
- **INS 230** Instrumentation I: 3
- **IND 190** Coordinated Internship: 3
- **IND 290** Coordinated Internship: 3

Total: 30

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
Award: Associate of Applied Science
Plan Code: 718-05     CIP Code: 15.0612

This program prepares students for employment as industrial mechanical technicians or supervisors. To find employment, applicants generally must be able to physically lift 50 lbs, have good hand dexterity, and the ability to crawl into cramped spaces.

Industry Certification: OSHA 10

Program Outcomes: Graduates will demonstrate the ability to:
1. Read basic drawings & symbols.
2. Stick weld & choose & use basic welding tools/materials.
3. Wire basic electrical circuits & understand basic wiring symbols.
4. Troubleshoot basic control circuits.
5. Troubleshoot & repair basic mechanical & electrical equipment.

Note: Students will select a mechanical or electrical pathway.
The courses are the same for the first two semesters.

Course Sequence
GENERAL EDUCATION

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TECHNICAL FOUNDATIONS

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CONTENT, SKILLS AND KNOWLEDGE

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<td>Applied Hydraulics and Pneumatics</td>
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Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

62 • Danville Community College
Advanced Manufacturing Technology  •  63

**Award:** Associate of Applied Science  
**Plan Code:** 718-09  
**CIP Code:** 15.0613

This specialized program, a partnership between DCC and the Institute for Advanced Learning & Research, takes place in a state-of-the-art CNC learning environment. Students work in an advanced machining flow-cell so they receive fully integrated training that meets the needs of leading manufacturers.

This program prepares students for higher-level machinist or entry-level manager positions. Topics include advanced-level CNC training, CAD/CAM, and inspection training, as well as dimensional metrology and advanced tooling applications.

**Program Integration:** 25% of courses are shared in the Precision Machining & IMT programs. Also, IMT students will simultaneously complete the CNC Flow Cell Machining CSC.

**Admission Requirements:** In addition to general college admission requirements, students must meet the following criteria:

1. All students must have completed MAC 223 and MAC 127 (or equivalents) with a C or higher.
2. All students must have completed a two-year precision machining program or have equivalent work experience, which instructors will evaluate on a case-by-case basis.

**Program Outcomes:** Graduates of this program will be able to:

1. Act as high performance team members and cultivate the knowledge required of mid-level machinists or entry-level managers.
2. Apply concepts of Lean and Six Sigma.
3. Understand basic economic principles as they apply to industry and the impact of those principles on manufacturing.
4. Operate a wide range of high performance machine tools including 5-axis mills, 3-axis lathes, computer numerical control (CNC) inner diameter and outer diameter surface grinders, and electrical discharge machining.
5. Learn ancillary processes associated with machining in a high-precision environment.

### Course Sequence

**GENERAL EDUCATION**

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<th>Lab</th>
<th>Hours in Class</th>
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**TECHNICAL FOUNDATION**

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**CONTENT SKILLS AND KNOWLEDGE**

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**PROGRAM INFO**

- **Minimum credits:** 67
- **Length:** 2 years
- **Career opportunities:**
  - CNC Programmer: $48,990  
  - Machinists, Tool & Die Makers: $43,160  
  - Job growth: 19% from 2014-2024  
  - Job growth: 6%

**Division:** Workforce Services (HAAS Center)  
**Contact:** 434.766.6607

*Median salaries nationwide as of 2015. Source: BLS.gov*
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<td>Multi-Axis Machine Tool Set-Up, Programming &amp; Operation</td>
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<td>MAC 224</td>
<td>Advanced Tooling Applications</td>
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<td>MAC 258</td>
<td>Tool Inspection, Validation, &amp; Presetting</td>
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<td>MAC 254</td>
<td>Flow Cell IT Integration</td>
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<td>Manufacturing Economics</td>
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Continued from previous page

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Arts, Design, & Humanities programs include short-term training to prepare graduates for immediate employment in the visual arts and design fields, as well as two-year associate degree programs that prepare well-rounded students capable of transferring successfully to a four-year college or university. Potential careers in the liberal arts and humanities include communications, education, writing, and social science.

2-D Art, Design, & Printing:
Business Management-Graphic Imaging Management Specialization (AAS) ................................................... 66
Commercial Art (CSC) ....................................................................................................................................... 67
Digital Art and Design (CSC) ............................................................................................................................. 68
Digital Drawing and Illustration (CSC) .............................................................................................................. 69
Digital Imaging and Photography (CSC) ........................................................................................................... 70
Graphic Communications (CSC) ....................................................................................................................... 70
Graphic Imaging Technology (DIPL) .................................................................................................................. 71
Printing Technology (CSC) ................................................................................................................................ 72

Liberal Arts & Humanities:
General Education (CSC) .................................................................................................................................. 73
Liberal Arts (AAS) .............................................................................................................................................. 74
Liberal Arts-Humanities Specialization (AAS) .................................................................................................... 75
Liberal Arts-Social Science Specialization (AAS) .............................................................................................. 76
BUSINESS MANAGEMENT - GRAPHIC IMAGING MANAGEMENT SPECIALIZATION

Award: Associate of Applied Science

Plan Code: 212-02  CIP Code: 52.0299

The specialization in Graphic Imaging Management is similar to other DCC business curricula, with an additional specialization in printing technology.

Program Outcomes: Graduates of this program will be able to:
1. Utilize industry-standard computer software in business communication media such as written reports and business plans using word processing software (i.e., Microsoft Word) and business presentations using presentation software (i.e., Microsoft PowerPoint);
2. Perform and interpret basic business math, accounting, and business statistical calculations;
3. Identify the basic concepts associated with business ethics and the importance of developing and adhering to a strong set of generally accepted ethical principles;
4. Demonstrate basic principles of human relationship skills which can be used to successfully interrelate with customers, associates, employees, and superiors in a business setting;
5. Demonstrate how the principles of basic economics (i.e., supply and demand, the American free enterprise system, etc.) apply to successful business management practices;
6. Explain basic legal and regulatory requirements for business and industry;
7. Evaluate marketing strategies for successful products and services;
8. Apply skills in the use various software to produce electronically generated documents;
9. Discuss the concepts of color separation and lithographic chemistry; and
10. Perform basic graphic imaging industry production planning and estimating tasks.

Course Sequence

FIRST SEMESTER

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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<td>Introduction to Business</td>
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<td>Layout and Design I</td>
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THIRD SEMESTER (SUMMER)

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Total 12 2 14 13

PROGRAM INFO

Minimum credits: 66
Length: 5 semesters (2 years)
Career opportunities: Graduates may become business owners or managers of graphic imaging departments or in sales and marketing of graphic imaging services and products. Salaries will vary
Division: Workforce Services
Contact: 434.797.8440

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FIFTH SEMESTER

<table>
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COMMERCIAL ART

**Award:** Career Studies Certificate

**Plan Code:** 221-514-22  **CIP Code:** 50.0401

The Commercial Art Career Studies Certificate includes both theory and application of graphics and commercial art processes.

**Program Outcomes:** Graduates of this program will be able to:
1. Demonstrate basic drawing skills;
2. Demonstrate an understanding of the various processes of graphics reproduction;
3. Apply design skills necessary for commercial printing purposes;
4. Demonstrate design skills utilizing Adobe InDesign software;
5. Demonstrate design skills utilizing Adobe Photoshop software; and
6. Demonstrate skills necessary to complete laboratory projects.

**Course Sequence**

<table>
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<th>Course</th>
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<th>Lab Hours</th>
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<td>Drawing Techniques I</td>
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DIGITAL ART AND DESIGN

Award: Career Studies Certificate

Plan Code: 221-514-25          CIP Code: 50.0401

The Digital Art & Design Career Studies Certificate is intended to provide a solid foundation of skills for entry-level work in graphic and interactive design, multimedia, and video production.

Program Outcomes: Graduates of this program will be able to:
1. Display an understanding of the differences between various industry-standard digital file types including raster image files, vector image files, HTML, CSS, and digital video files.
2. Demonstrate an understanding through class projects of digital photo manipulation as pertaining to photography and graphic design.
3. Demonstrate how different uses of typography can affect the intended audience of a graphic design project.
4. Demonstrate an understanding of vector image creation to complete assigned projects.
5. Demonstrate an understanding of the digital video process including storyboarding, digital video capture, and linear digital video editing.
6. Demonstrate an understanding of basic web principles including proper image sizing, what content management systems are, and the basic use of FTP software.

Course Sequence

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PROGRAM INFO

Minimum credits: 17

Length: 1-3 semesters

Career opportunities: Graphic Designer: $54,680; Film/Video Editor: $47,060; Multimedia Artist: $58,820

*Median salaries nationwide as of 2018.
Source: BLS.gov

Division: Workforce Services

Contact: 434.797.8433
DIGITAL DRAWING AND ILLUSTRATION*

Award: Career Studies Certificate

Description: The Digital Drawing and Illustration Career Studies Certificate includes both theory and application to create digitally rendered drawings and illustrations suitable for graphic design and web development.

Career Opportunity: This five course, 17 credit Digital Drawing and Illustration Career Studies Certificate is intended to provide a foundation of skills for the graphic designer or website developer.

Length: Students can complete this program in 1 to 3 semesters.

Admission Requirements: General requirements for admission to the college.

Program Outcomes: Students who complete the program will develop competencies in the following areas:
1. Demonstrate basic drawing skills;
2. Demonstrate strong drawing skills using a computer tablet;
3. Demonstrate strong illustration skills utilizing Adobe InDesign software;
4. Demonstrate strong illustration skills utilizing Adobe Illustrator software;
5. Demonstrate strong illustration skills utilizing Adobe Photoshop software;
6. Demonstrate the basic techniques of animation utilizing Adobe Animate software; and
7. Demonstrate the skills necessary to digitally print laboratory projects.

Course Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 180</td>
<td>Intro. to Computer Graphics</td>
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<td>3</td>
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<tr>
<td>ART 203</td>
<td>Animation I</td>
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<td>PNT 265</td>
<td>Digital Imaging Applications</td>
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<td><strong>14</strong></td>
<td><strong>24</strong></td>
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</table>

PROGRAM INFO

Minimum credits: 17

Length: 2 semesters

Career opportunities:
Graphic Designer: $54,680;
Film/Video Editor: $47,060;
Multimedia Artist: $58,820

*Median salaries nationwide as of 2018. Source: BLS.gov

Division: Workforce Services
Contact: 434.797.8433

*Pending approval
DIGITAL IMAGING AND PHOTOGRAPHY

Award: Career Studies Certificate

Plan Code: 221-502-10       CIP Code: 50.0605

Students will learn techniques for taking better pictures, as well as how to edit, enhance, print, and publish photos online.

Program Outcomes: Graduates of this program will demonstrate:
1. Understanding of the impact using different types of cameras, flash, and studio lighting and equipment.
2. A technical understanding of basic camera functions, aperture, shutter speed, ISO sensitivity, and focus.
3. Concepts of composition including the rule of thirds, vanishing point, and lines perspective.
4. The ability to edit photos using basic digital photo editing tools, to create black and white, crop, straighten, color adjust, burn and dodge.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<th>Credits</th>
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<td>ART 283</td>
<td>Computer Graphics I</td>
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<td>ITD 110</td>
<td>Web Design</td>
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<td>ART 180</td>
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<td></td>
<td>Total</td>
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</table>

PROGRAM INFO

Minimum credits: 16
Length: 1-2 semesters
Career opportunities:
Photographer: $62,260
Art & Design Worker: $54,680
*Median salaries nationwide as of 2018.
Source: BLS.gov

Division: Workforce Services
Contact: 434.797.8433

GRAPHIC COMMUNICATIONS

Award: Career Studies Certificate

Plan Code: 221-514-35       CIP Code: 50.040

Graphic Communications provides both theory and application in the technological printing industry. Students will learn OSHA safety regulations, desktop publishing, and characteristics of printed works.

Program Outcomes: Graduates of this program will be able to:
1. Demonstrate an understanding of the various processes of graphics reproduction;
2. Apply skills necessary to utilize text and graphics to produce production ready copy;
3. Demonstrate an understanding of capturing and reproduction of line art, line copy and continuous tone by conventional and electronic methods;
5. Demonstrate design skills utilizing Adobe InDesign software.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<td>PNT 110</td>
<td>Survey of Processes</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<tr>
<td>PNT 211</td>
<td>Electronic Publishing I</td>
<td>2</td>
<td>4</td>
<td>3</td>
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<tr>
<td>PNT 135</td>
<td>Print Imaging</td>
<td>1</td>
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<tr>
<td>PNT 221</td>
<td>Layout &amp; Design I</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<tr>
<td>PNT 298</td>
<td>Seminar &amp; Project</td>
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<td>2</td>
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PROGRAM INFO

Minimum credits: 16
Length: 1-2 semesters
Career opportunities:
Graphic Designer/Lab Technicians: $54,680
*Median salaries nationwide as of 2018.
Source: BLS.gov

Division: Workforce Services
Contact: 434.797.8433

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

70 • Danville Community College
The program is designed to provide the student with an effective working knowledge of the various processes of graphics and printing. Courses include the basics of drawing and illustration, both by hand and with the use of the computer or a tablet, extensive use of the iMac with the Creative Suite software (Adobe InDesign, Illustrator, and Photoshop) to prepare original designs and manipulate images, creating 3D package designs, utilizing digital printing equipment to output posters and banners, textile image design with heat transfer and screen printing, and utilizing machinery to produce quality printed products on a wide variety of materials.

Program Outcomes: Graduates of this program will be able to:
1. Demonstrate an understanding of the various processes of graphics reproduction.
2. Demonstrate design skills utilizing Adobe software.
3. Apply knowledge of the interaction of ink and paper to complete laboratory projects.
4. Apply skills to prepare and digitally print multicolor designs.
5. Demonstrate technical and skill competencies in the finishing and bindery operations of printed pieces.

Course Sequence

FIRST SEMESTER
ART 180  Intro to Computer Graphics  2  3  5  3
PNT 110  Survey of Reproductive Processes  2  3  5  3
PNT 130  Applied Math for Graphics  2  2  4  3
PNT 131  Principles of Lithography I  3  3  6  4
PNT 135  Print Imaging  1  3  4  2
PNT 298  Seminar & Project  2  0  2  2
SDV 100  College Success Skills  1  0  1  1
Total  13  14  27  18

SECOND SEMESTER
ENG 131  Technical Report Writing (or approved sub.)  3  0  3  3
ART 283  Computer Graphics I  2  4  6  4
PNT 141  Printing Applications I  1  4  5  3
PNT 211  Electronic Publishing  2  2  4  3
PNT 221  Layout & Design I  2  3  5  3
Total  10  13  23  16

THIRD SEMESTER (SUMMER TERM I)
PNT 142  Printing Applications  2  2  4  3
ART 281  Illustration for Designers  2  2  4  3
PNT 222  Layout & Design II  2  3  5  3
PNT 260  Color Separation  2  3  5  3
Total  8  10  18  12

FOURTH SEMESTER
ART 287  Portfolio & Resume Preparation  1  4  5  3
ART 266  Package Design  2  2  4  3
PNT 251  Offset Press Operations I  3  3  6  4
PNT 265  Digital Imaging Applications  3  3  6  4
Total  9  12  21  14

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
GRAPHIC IMAGING TECHNOLOGY

FIFTH SEMESTER
ECO 100    Elementary Economics (or approved sub)  3 0 3 3
PNT 241    Advanced Printing App. I  1 4 5 3
PNT 231    Lithographic Chemistry  2 0 2 2
PNT 245    Production Planning & Estimating  3 3 6 4
Total 9 7 16 12

PROGRAM INFO
Minimum credits: 16
Length: 1-2 semesters
Career opportunities: Pre-Press Technician: $40,060
Printing Press Operator: $37,020
Binding & Finish Worker: $32,170
*Median salaries nationwide as of 2018. Source: BLS.gov
Division: Workforce Services
Contact: 434.797.8433

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

PRINTING TECHNOLOGY\textsuperscript{G3}

Award: Career Studies Certificate

Plan Code: 221-964-01

CIP Code: 10.0301

The Printing Technology certificate provides both theory and application in the technological printing industry. Students will learn safety regulations, lithographic chemistry, and characteristics of printed works.

Program Outcomes: Graduates of this program will demonstrate:
1. Design skills utilizing Adobe InDesign software.
2. An understanding of the fundamentals of reproduction processes.
3. Technical and skill competencies in the area of lithography complete laboratory projects.
5. An understanding of digital imaging to produce printed images.

Course Sequence
\begin{tabular}{|l|c|c|c|c|}
\hline
Course & Description & Lecture Hours & Lab Hours & Total Hours & Credits \\
\hline
ART 180 & Intro to Computer Graphics & 2 & 3 & 5 & 3 \\
PNT 110 & Survey of Processes & 2 & 3 & 5 & 3 \\
PNT 131 & Principles of Lithography & 3 & 3 & 6 & 4 \\
PNT 298 & Seminar & Project & 2 & 0 & 2 & 2 \\
PNT 265 & Digital Imaging Applications & 3 & 3 & 6 & 4 \\
\hline
Total & & 12 & 12 & 24 & 16 \\
\hline
\end{tabular}
GENERAL EDUCATION

Award: Certificate

Plan Code: 695       CIP Code: 24.0199

This program is designed for students preparing to transfer to a four-year institution after one year of study at DCC. It may also be attractive to students who intend to transition into one of DCC’s transfer degrees.

Program Outcomes: Graduates of this program will demonstrate:
1. The ability to communicate effectively by means of writing, speaking, listening & reading;
2. Proficiency in conducting experiments & recording & interpreting data;
3. The role of ethics, cultures & society;
4. The critical thinking skills of synthesizing & analyzing complex ideas; and
5. The role of arts & humanities in society.

Note: Only transfer-level college courses may be counted.

Course Sequence

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
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<td>Social Science Elective²</td>
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SECOND SEMESTER

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<td>HIS History Elective</td>
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<td>Social Science Elective²</td>
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<td>Transfer-level Lab Science</td>
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²Social Science Electives: Any two courses in Economics, History, Political Science, Psychology or Sociology

Minimum credits: 33
Length: 2 semesters
(If suggested full-time course sequence is followed.)

Transfer opportunities: Admission requirements vary by college. Students are urged to familiarize themselves with the requirements of the school to which they intend to transfer and plan course selections with their DCC advisor. To learn more, visit danville.edu/transfer

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

Minimum credits: 33
Length: 2 semesters
(If suggested full-time course sequence is followed.)

Transfer opportunities: Admission requirements vary by college. Students are urged to familiarize themselves with the requirements of the school to which they intend to transfer and plan course selections with their DCC advisor. To learn more, visit danville.edu/transfer

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462
LIBERAL ARTS

Award: Associate in Arts & Science

Plan Code: 650    CIP Code: 24.0101

This curriculum includes courses in a variety of disciplines, including the humanities, natural sciences, mathematics, social sciences, and health and physical education. This degree may also be appropriate for students who plan to complete a baccalaureate degree program with certification to teach elementary or secondary English, pre-law, humanities, or social sciences. Students have sufficient flexibility to select courses appropriate to the requirements of their intended transfer institution. Students should complete a DCC program comparable to the first two years of the program at the transfer institution.

Program Outcomes: Graduates of this program will demonstrate:
1. The ability to communicate effectively by means of listening, speaking, reading and writing.
2. The critical thinking skills of synthesizing and analyzing complex ideas.
3. The role of ethics, cultures, and society.
4. And describe individual and group development and behavior; and
5. Competence in research methods and scientific inquiry.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
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<td>Natural Science course with lab</td>
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<td>6</td>
<td>4</td>
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Minimum credits: 61
Length: 2 years (4 semesters, if suggested full-time course sequence is followed.)

Transfer opportunities: This degree is designed for students planning to transfer to a four-year university for any of the liberal arts. Admission requirements vary by institution. Students are urged to familiarize themselves with the requirements of the college to which they intend to transfer and plan course selections with their DCC advisor.

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

PROGRAM INFO

Continued on next page
FOURTH SEMESTER

ENG  Literature II 3  0  3  3
HIS  History Elective 3  0  3  3
Social Science Requirement 3  0  3  3
Focus Course IV 3  0  3  3
HLT/PED  Approved Wellness Elective 1  0  1  1

Total 13  10  13  13

1 A sequence of four Focus Courses must be selected by the student and approved by the academic advisor. Focus Courses should be related to each other and should also be accepted in transfer to the four-year program of the student's choice. Examples of Focus Course sequences include: ART 101-102, MUS 121-122, HIS 121-122-266-268, HLT 100-116-200-215, PHI 100, REL 200-210-230, PSY 200-215-230, ASL 101-202-201-202, SOC 200-235-236, SPA 101-102-203-204

2 Students must complete a full year of social science courses by taking one of the following sequences: two courses in one of economics, political science, psychology or sociology.

3 This credit can be satisfied by a single 1 or more credit course in Health or Physical Education.

LIBERAL ARTS – HUMANITIES SPECIALIZATION

Award: Associate in Arts & Science

Plan Code: 650-01  CIP Code: 24.0101

This curriculum requires a broad range of general education requirements in mathematics, social science, natural science and humanities. This program is also appropriate for students intending to pursue humanities-related fields, which include communications and journalism, as well as some of the fine arts such as theater, music, and creative writing. Students have sufficient flexibility to select courses appropriate to the requirements of their intended transfer institution. Students should complete a DCC program comparable to the first two years of the program at the transfer institution.

Program Outcomes: Graduates of this program will demonstrate:
1. The ability to communicate effectively by means of listening, speaking, reading and writing.
2. The critical thinking skills of synthesizing and analyzing complex ideas.
3. The role of ethics, cultures, and society.
4. And describe individual and group development and behavior; and
5. Competence in research methods and scientific inquiry.

Course Sequence

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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<tr>
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<td>Science course with lab</td>
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<td>Approved Computer Elective</td>
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<tr>
<td>HLT/PED</td>
<td>Approved Wellness Elective</td>
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</tbody>
</table>

Total 14  3  17  15

Minimum credits: 61

Length: 2 years
(4 semesters, if suggested full-time course sequence is followed.)

Transfer opportunities:
This degree is designed for students planning to transfer to a four-year university. Humanities disciplines include art, English, philosophy, foreign languages, drama, religion, speech, and communication studies.

Admission requirements vary by institution. Students are urged to familiarize themselves with the requirements of the college to which they intend to transfer and plan course selections with their DCC advisor.

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

PROGRAM INFO

Continued on next page

Arts, Design, & Humanities • 75
**LIBERAL ARTS – HUMANITIES SPECIALIZATION**

**SECOND SEMESTER**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
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<tr>
<td>MTH Approved Transfer Math</td>
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**THIRD SEMESTER**

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<tr>
<td>Literature Requirement I</td>
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**Total** 15 0 15 15

**FOURTH SEMESTER**

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**Total** 15 0 15 15

---

1History I and II. Students must complete a full-year sequence of U.S. History (HIS 121 & HIS 122), or Western Civilization (HIS 101 & HIS 102), or World Civilizations (HIS 111 & HIS 112).

2Humanities & Fine Arts Electives: Students must complete at least two humanities courses plus two sophomore literature courses & at least two courses in fine arts. Students may use the liberal arts elective requirement of six credit hours to pursue greater depth in the fine arts or humanities. Again, selection of courses should be based on the student’s interest and the demands of their intended transfer institution.

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**LIBERAL ARTS – SOCIAL SCIENCE SPECIALIZATION**

**Award:** Associate in Arts & Science

**Plan Code:** 650-02 **CIP Code:** 24.0101

This curriculum requires a broad range of general education in mathematics, social science, natural science and humanities. This program is appropriate for students intending to pursue a social science discipline such as sociology, criminology, anthropology, psychology, history, political science, or economics. Degrees in these areas can lead to careers in Law, Law Enforcement, Education, Social Work, Economics, Anthropology, and Public Administration, among others. Students have sufficient flexibility to select courses appropriate to the requirements of their intended transfer institution. Students should complete a DCC program comparable to the first two years of the program at the transfer institution.

Program Outcomes Graduates of this program will demonstrate:

1. The ability to communicate effectively by means of listening, speaking, reading & writing.
2. The critical thinking skills of synthesizing & analyzing complex ideas.
3. The role of ethics, cultures, & society.
4. And describe individual & group development & behavior; and
5. Competence in research methods & scientific inquiry.

**PROGRAM INFO**

- **Minimum credits:** 61
- **Length:** 2 years
  (4 semesters, if suggested full-time course sequence is followed.)

**Transfer opportunities:**

This degree is designed for students planning to transfer to a four-year university in a social science discipline. Admission requirements vary by institution. Students are urged to familiarize themselves with the requirements of the college to which they intend to transfer and plan course selections with their DCC advisor.

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462
LIBERAL ARTS – SOCIAL SCIENCE SPECIALIZATION

Continued from previous page

Course sequence note: Students must complete a year-long sequence in history, sociology, & psychology; and also must select two electives that may include courses in the above areas or in different social sciences such as political science or economics. These electives and humanities electives should be used to meet the demands of a transfer institution and to achieve breadth of exposure to other disciplines.

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<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<td>3</td>
<td>19</td>
<td>17</td>
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| SECOND SEMESTER |               |           |                |         |
| ENG 112 College Composition II | 3 | 0 | 3 | 3 |
| HIS History Elective II | 3 | 0 | 3 | 3 |
| MTH Math Elective | 3 | 0 | 3 | 3 |
| Natural Science course with lab II | 3 | 3 | 6 | 4 |
| Humanities or Fine Arts Elective I | 3 | 0 | 3 | 3 |
| Total | 15 | 3 | 18 | 16 |

| THIRD SEMESTER  |               |           |                |         |
| SOC Sociology Elective I | 3 | 0 | 3 | 3 |
| PSY Psychology Elective I | 3 | 0 | 3 | 3 |
| Liberal Arts Elective I | 3 | 0 | 3 | 3 |
| Social Science Elective I | 3 | 0 | 3 | 3 |
| Humanities or Fine Arts Elective II | 3 | 0 | 3 | 3 |
| Total | 15 | 0 | 15 | 15 |

| FOURTH SEMESTER |               |           |                |         |
| SOC Sociology Elective II | 3 | 0 | 3 | 3 |
| PSY Psychology Elective II | 3 | 0 | 3 | 3 |
| Liberal Arts Elective II | 3 | 0 | 3 | 3 |
| Social Science Elective II | 3 | 0 | 3 | 3 |
| HLT/PED Approved Wellness Elective | 1 | 0 | 1 | 1 |
| Total | 13 | 0 | 13 | 13 |
Business and Marketing programs prepare students for a variety of careers working in office environments, starting their own businesses, or transferring to a four-year college or university. Programs range from short-term career studies certificates lasting one to two semesters, to full two-year associate degrees that may lead to additional employment prospects and higher wages.

**Administrative Support & Office Studies:**
- Administrative Support Technology-General Office Specialization (AAS) ......................................................... 79
- Administrative Support Technology Medical Office Administration Specialization (AAS) ................................. 80
- Administrative Support Technology-Medical Office Coding Specialization (AAS) .................................................. 81
- General Office Studies (CSC) ........................................................................................................................... 83
- Medical Coding (CSC) ....................................................................................................................................... 84
- Medical Office Studies (CSC) ............................................................................................................................ 85
- Office Information Processing (CERT) ................................................................................................................ 86

**Business Management:**
- Business Management -Automotive Management Specialization (AAS) .......................................................... 87
- Business Management- Management Specialization (AAS) ............................................................................. 88
- Business Management Project Management Specialization (AAS) .................................................................. 90
- Project Management (CSC) .............................................................................................................................. 91

**College Transfer:**
- Business Administration (AAS) .......................................................................................................................... 92

**Entrepreneurship:**
- Small Business Management (CSC) .................................................................................................................. 93
- Technical Studies Venture Creation and Management (aka "Build Your Business") (A.A.S.) ............................ 95

**Marketing:**
- Logistics Management (CSC) ............................................................................................................................. 96
- Marketing – Electronic Commerce Specialization (A.A.S.) ................................................................................. 97
- Marketing – Marketing Specialization (A.A.S.) .................................................................................................. 99
- Marketing – Warehousing and Distribution Specialization (A.A.S.) ................................................................. 100

For the Business Management – Graphic Imaging Specialization (A.A.S.) degree, please see Arts, Design, & Humanities.
Award: Associate of Applied Science

Plan Code: 298-02  CIP Code: 52.0499

This program provides broad-based knowledge and skills needed in many different types of business settings.

Program Coordination: Students in the Administrative Support Technology – General Office Specialization may also pursue the Career Studies Certificate in Medical Coding. This option adds an additional semester to the student’s curriculum.

Industry Credentials: Microsoft Office Specialist (MOS) certification, Office Proficiency Assessment Certification (OPAC)

Program Outcomes: Graduates of this program will be able to:
1. Demonstrate knowledge of various administrative support functions to perform satisfactorily in an office environment.
2. Communicate effectively orally and in writing.
3. Key with a level of speed and accuracy acceptable to perform satisfactorily to industry standards.
4. Perform mathematical calculations to accurately complete financial and accounting functions used in an office environment.
5. Demonstrate knowledge of alphabetic and numeric filing rules to efficiently file and retrieve documents.
6. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.

Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Hours</th>
<th>Lab</th>
<th>Hours in Class</th>
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<td>ITE 140 Spreadsheet Software</td>
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FOURTH SEMESTER
ACC 110 Intro to Computerized Accounting 2 0 2 2
BIO/NAS/ MTH Science or Math Elective 3 0 3 3
BUS 235 Business Letter Writing 3 0 3 3
AST 205 Business Communications 3 0 3 3
AST 253 Advanced Desktop Publishing I 3 0 3 3
SDV 106 Preparation for Employment 1 0 1 1
SPA 101 Beginning Spanish I 4 0 4 4
Total 19 0 19 19

**ADMINISTRATIVE SUPPORT TECHNOLOGY – GENERAL OFFICE SPECIALIZATION**

Continued from previous page

**Award:** Associate of Applied Science

**Plan Code:** 298-01  **CIP Code:** 51.0712

This program provides broad-based knowledge and skills needed to work in a medical office environment. Medical courses are typically taught in the evenings. Students must earn a grade of C or better in all HIM courses in order to complete the program. Student who receive a grade of D or F must repeat that course before continuing to the HIM course sequence.

**Industry Credentials:** Microsoft Office Specialist (MOS) certification, Office Proficiency Assessment Certification (OPAC)

Program Outcomes: Graduates of this program will be able to:
1. Demonstrate knowledge of various administrative support functions to perform satisfactorily in an office environment.
2. Communicate effectively using oral and written methods. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.
3. Perform mathematical calculations to accurately complete financial and accounting functions used in an office environment.
4. Key with a level of speed and accuracy acceptable to perform satisfactorily to industry standards.
5. Demonstrate alphabetic and numeric filing rules to efficiently file and retrieve documents.
6. Demonstrate knowledge of medical terminology necessary to perform satisfactorily in a medical office environment.

**Course Sequence**

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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**FIRST SEMESTER**
AST 101 Keyboarding I 3 0 3 3
BIO 100 Basic Human Biology 3 0 3 3
ENG 111 College Composition I 3 0 3 3
HLT 143 Medical Terminology I 3 0 3 3
ITE 116 Survey of Computer Software Applications 2 0 2 2
SDV 100 College Success Skills 1 0 1 1
Total 15 0 15 15

**ADMINISTRATIVE SUPPORT TECHNOLOGY – MEDICAL OFFICE ADMINISTRATION SPECIALIZATION**

**Program Info**

**Minimum credits:** 66

**Length:** 5 semesters (2 years), if full-time suggested course sequence is followed

**Career opportunities:**
- Medical Secretary: $37,090; Job Growth: 21% from 2014 to 2024
- Office Manager/Clerical Supervisor $52,630; Job Growth: 8%
- Executive Assistant: $61,550; Job Growth: 5%

*Mean salaries nationwide as of 2018. Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

**Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.**

80 • Danville Community College
<table>
<thead>
<tr>
<th>Semester</th>
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<td>Beginning Spanish I</td>
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G3 Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

**ADMINISTRATIVE SUPPORT TECHNOLOGY – MEDICAL OFFICE CODING SPECIALIZATION**

**Award:** Associate of Applied Science

**Plan Code:** 298-04  **CIP Code:** 52.0499

This program provides broad-based knowledge and skills needed to work in a medical office environment with specific training in medical insurance coding. Medical courses are typically taught in the evenings. Students must earn a grade of C or better in all HIM courses in order to complete the program. Students who receive a grade of D or F must repeat that course before continuing to the HIM course sequence.

**Industry Credentials:** Medical Billing & Coding Certification; Microsoft Office Specialist (MOS) certification; Office Proficiency Assessment Certification (OPAC)

**PROGRAM INFO**

- **Minimum credits:** 66
- **Length:** 5 semesters (2 years), if full-time suggested course sequence is followed
- **Career opportunities:** Medical Secretary: $37,090; Job Growth: 21% from 2014 to 2024
  - Medical Coder: $44,010; Job Growth: 15%
  - Office Manager/Clerical Supervisor $52,630; Job Growth: 8%
  
  *Mean salaries nationwide as of 2018. Source: BLS.gov*

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

Continued on next page
Program Outcomes: Graduates of this program will be able to:
1. Demonstrate knowledge of various administrative support functions to perform satisfactorily in an office environment.
2. Communicate effectively using oral & written methods.
3. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.
4. Perform mathematical calculations to accurately complete financial & accounting functions used in an office environment.
5. Key with a level of speed & accuracy acceptable to perform satisfactorily to industry standards.
7. Demonstrate knowledge of medical terminology necessary to perform satisfactorily in a medical office environment.
8. Demonstrate competence in using industry-standard healthcare coding systems.

Course Sequence

Lecture Lab Hours Credits

FIRST SEMESTER
AST 101 Keyboarding I 3 0 3 3
BIO 100 Basic Human Biology 3 0 3 3
ENG 111 College Composition I 3 0 3 3
HLT 143 Medical Terminology I 3 0 3 3
ITE 116 Survey of Computer Software Applications 2 0 2 2
SDV 100 College Success Skills 1 0 1 1
Total 15 0 15 15

SECOND SEMESTER
AST 102 Keyboarding II 3 0 3 3
AST 234 Records & Database Management 3 0 3 3
ENG 112 College Composition II 3 0 3 3
HIM 106 International Classification of Diseases I 2 0 2 2
HIM 143 Managing Electronic Billing - Med. Practice 3 0 3 3
HLT 144 Medical Terminology II 3 0 3 3
Total 17 0 17 17

THIRD SEMESTER
AST 238 Word Processing Advanced Operations 3 0 3 3
HIM 107 International Classification of Diseases II 3 0 3 3
HIM 130 Health Information Systems 3 0 3 3
Total 9 0 9 9

FOURTH SEMESTER
AST 243 Office Administration I 3 0 3 3
HIM 105 Current Procedural Terminology 2 0 2 2
HIM 226 Legal Aspects of Health Record Documentation 2 0 2 2
HIM 253 Health Records Coding 3 0 3 3
Total 10 0 10 10

FIFTH SEMESTER
AST 244 Office Administration II 3 0 3 3
BUS 121 Business Math I 3 0 3 3
ECO 100 Elementary Economics 3 0 3 3
HLT/PED Health/Physical Ed 0 2 2 1
SDV 106 Health/Physical Ed 0 2 2 1
SDV 106 Preparation for Employment 1 0 1 1
SPA 101 Beginning Spanish I 4 0 4 4
Total 14 2 16 15

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
# General Office Studies

**Award:** Career Studies Certificate

**Plan Code:** 221-298-01  **CIP Code:** 52.0401

This program provides training in basic skills needed to work in an office environment.

**Program Coordination:** Graduates will have 26 credits towards the A.A.S. in Administrative Support Technology – General Office and are strongly encouraged to complete the full degree.

**Industry Credentials:** Office Proficiency Assessment Certification (OPAC)

**Program Outcomes:** Graduates of this program will be able to:
1. Demonstrate knowledge of various administrative support functions to perform satisfactorily in an office environment.
2. Communicate effectively orally and in writing.
3. Key with a level of speed and accuracy acceptable to perform satisfactorily to industry standards.
4. Perform mathematical calculations to accurately complete financial and accounting functions used in an office environment.
5. Demonstrate knowledge of alphabetic and numeric filing rules to efficiently file and retrieve documents.
6. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.

## Lecture Lab Hours Credits

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<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<td>ITE 116 Survey of Computer Software Applications</td>
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| **SECOND SEMESTER**              |               |           |               |         |
| AST 102 Keyboarding II           | 3             | 0         | 3             | 3       |
| AST 234 Records & Database Management | 3       | 0         | 3             | 3       |
| AST 244 Office Administration II | 3             | 0         | 3             | 3       |
| ENG 112 College Composition II   | 3             | 0         | 3             | 3       |
| **Total**                        | 12            | 0         | **12**        | **12**  |

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
**MEDICAL CODING**

**Award:** Career Studies Certificate

**Plan Code:** 221-152-02  **CIP Code:** 51.0707

This program provides career options and opportunities for advancement in the area of administrative support in the medical field. Program Requirements: Students must receive a grade of “C” or better in HIM classes in order to complete the program. Students who receive a “D” or “F” grade must repeat that course before continuing to the HIM course sequence.

**Program Coordination:** This certificate is part of the career pathway for the Administrative Support Technology program. Students completing this certificate will have 29 credits toward the Associate of Applied Science degree in Administrative Support Technology – Medical Office Coding Specialization.

**Program Outcomes:** Graduates of this program will demonstrate:

1. Knowledge of medical terminology necessary to perform satisfactorily in a medical office environment;
2. Proficiency in using industry standard healthcare coding systems.

**Course Sequence**

**FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<td>Basic Human Biology</td>
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**SECOND SEMESTER**

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<th>Credits</th>
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<tbody>
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<td>Managing Electronic Billing in a Medical Practice</td>
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**THIRD SEMESTER**

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<td>Health Information Systems</td>
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**FOURTH SEMESTER**

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</table>

**Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.**

**PROGRAM INFO**

- **Minimum credits:** 29
- **Length:** 4 semesters part-time.
- Most classes are offered in the evening or online to accommodate students who work during the day.
- **Career opportunities:**
  - Medical Coder: $44,010; Job Growth: 15% from 2014 to 2024
  - Health Records Technician: $44,010; Job Growth: 15%
  - Information Clerk: $35,750
  - Billing Clerk: $39,520

*Mean salaries nationwide as of 2018
Source: BLS.gov

**Division:** Arts, Science, & Business

**Contact:** 434.797.8402 or 434.797.8462
Award: Career Studies Certificate

Plan Code: 221-285-89  CIP Code: 51.0712

This program is designed to prepare graduates for entry-level clerical positions in a medical/health care office environment.

Program Coordination: This CSC is part of the career pathway for the Administrative Support Technology program. Students completing this certificate will have 23 credits toward the Associate of Applied Science degree in Administrative Support Technology – Medical Office Administration Specialization.

Industry Credentials: Office Proficiency Assessment Certification (OPAC)

Program Outcomes: Graduates of this program will demonstrate:
1. Knowledge of medical terminology necessary to perform satisfactorily in a medical office environment;
2. Key with a level of speed & accuracy acceptable to perform satisfactorily to industry standards.
3. Demonstrate alphabetic & numeric filing rules to efficiently file & retrieve documents.
4. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<td>AST 234</td>
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*Mean salaries nationwide as of 2018
Source: BLS.gov

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Office Information Processing

**Award:** Certificate

**Plan Code:** 293  **CIP Code:** 52.0499

The Office Information Processing Certificate program is designed for persons who are seeking career opportunities in the information processing field.

**Program Coordination:** The certificate in Office Information Processing is part of the career pathway for the Administrative Support Technology program. Students completing this certificate will have 40 credits toward the Associate of Applied Science degree in Administrative Support Technology – General Office specialization and are strongly encouraged to complete the associate degree program.

**Program Outcomes:** Graduates of this program will be able to:
1. Communicate effectively orally and in writing.
2. Demonstrate proficiency in using word processing software to accurately format a variety of business correspondence.
3. Perform mathematical calculations to accurately complete financial and accounting functions used in an office environment.
4. Key with a level of speed and accuracy acceptable to perform satisfactorily to industry standards.
5. Demonstrate knowledge of alphabetic and numeric filing rules to efficiently file and retrieve business correspondence.

**Course Sequence**

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td><strong>FIRST SEMESTER</strong></td>
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<tr>
<td>AST 101 Keyboarding I</td>
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<td>AST 243 Office Administration I</td>
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PROGRAM INFO

**Minimum credits:** 40

**Length:** 3 semesters, if full-time suggested course sequence is followed

**Career opportunities:**
- Customer Service Representative: $36,470; Job Growth: 10% from 2014-2024
- Human Resources Assistant: $41,620; Job Growth: 3%
- Financial Clerk: $39,660; Job Growth: 6%

*Mean salaries nationwide as of 2018. Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

- Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

86 • Danville Community College
BUSINESS MANAGEMENT – AUTOMOTIVE MANAGEMENT SPECIALIZATION

**Award:** Associate of Applied Science

**Plan Code:** 212-04  **CIP Code:** 52.0299

The Automotive Management Program is designed for students seeking careers in management and support areas of automotive sales, repair, parts and manufacturing businesses. The program includes courses in automotive technology, general education and electives.

**Program Outcomes:** Graduates of this program will be able to:
1. Utilize industry-standard computer software in business communication media, e.g. written reports and business plans using word processing software and presentations using presentation software.
2. Perform and interpret basic business math, accounting, and business statistical calculations;
3. Identify basic concepts associated with business ethics and the importance of developing and adhering to a strong set of generally accepted ethical principles;
4. Demonstrate basic principles of human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Describe how the principles of basic economics (e.g. supply and demand, the American free enterprise system, etc.) apply to successful business management practices;
6. Explain basic legal and regulatory requirements for business and industry;
7. Evaluate marketing strategies for successful products and services;
8. Discuss the principles of alternative fuels and hybrid vehicle design;
9. Discuss elementary principles of automotive electrical, fuel, and braking systems; and
10. Apply customer service skills in an automotive business setting.

**Course Sequence**

**FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<tr>
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<td>BUS 100</td>
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**SECOND SEMESTER**

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**THIRD SEMESTER (SUMMER)**

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</tbody>
</table>

*Mean salaries nationwide as of 2018 Source: BLS.gov

**PROGRAM INFO**

**Minimum credits:** 65

**Length:** 5 semesters (2 years), including one summer session, if full-time suggested course sequence is followed

**Career opportunities:** Automotive Insurance Claims Adjuster: $67,540
Automotive Sales: $41,790

Small Business Owner/Manager: Salaries will vary.

Division: Workforce Services
Contact: 434.797.8440

Continued on next page
The first two semesters of the program are similar to other business curricula, with the second year focusing on the Business Management specialization. DCC is accredited by Alpha Beta Gamma International Business Honor Society to initiate members into the honor society for business and related disciplines. For more information, refer to [www.abg.org](http://www.abg.org).

**Program Outcomes:** Graduates of this program will be able to:

1. Utilize industry-standard computer software in business communication media, e.g. written reports and business plans using word processing software and presentations using presentation software;
2. Perform and interpret basic business math, accounting, and business statistical calculations;
3. Identify basic concepts associated with business ethics and the importance of developing and adhering to a strong set of generally accepted ethical principles;
4. Demonstrate basic principles of human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Describe how the principles of basic economics (e.g. supply and demand, the American free enterprise system, etc.) apply to successful business management practices;
6. Explain basic legal and regulatory requirements for business and industry;
7. Recognize the features, advantages, and disadvantages of business ownership categories (proprietorship, partnership, corporation, etc.);
8. Discuss standard methods for interviewing, hiring, training, motivating, and supervising employees;
9. Recognize basic business strategy and philosophy development techniques (e.g., SWOT analysis, vision, mission, values, goals, objectives, etc.); and
10. Evaluate marketing strategies for successful products and services.
# BUSINESS MANAGEMENT - MANAGEMENT SPECIALIZATION

<table>
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<th>Course Sequence</th>
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<th>Credits</th>
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<tr>
<td><strong>FIRST SEMESTER</strong></td>
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<tr>
<td>BUS 121 Business Mathematics I</td>
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<td>ENG 111 College Composition I</td>
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<td>SDV 100 College Success Skills</td>
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Project Management is a rapidly growing field relevant to many business areas, including information technology, engineering, contracting, and the nonprofit sector. The first two semesters of the A.A.S. degree program are similar to other business curricula, with the exception of four courses specifically associated with Project Management. Degree completers will also be awarded the Career Studies Certificate in Project Management. DCC is accredited by Alpha Beta Gamma International Business Honor Society to initiate members into the honor society for business and related disciplines. For more information, refer to www.abg.org.

Program Outcomes: Graduates will be able to:

1. Utilize industry-standard computer software in business communication media, e.g. written reports and business plans using word processing software and presentations using presentation software;
2. Perform and interpret business math, accounting, and business statistical calculations;
3. Understand the basic concepts associated with business ethics and the importance of developing and adhering to a strong set of generally-accepted ethical principles;
4. Demonstrate principles of human relationship skills used to successfully interrelate with customers, associates, employees, and superiors in a project management setting;
5. Understand standard methods for training, motivating, and managing people in a team-based environment;
6. Plan, execute, and control projects according to Project Management Institute (PMI) Project Management Body of Knowledge (PMBOK) processes, tools, and techniques.

**PROGRAM INFO**

Minimum credits: 66

**Length:** 4 semesters (2 years), if full-time suggested course sequence is followed. In project management (BUS 204, 206, 295, and ITP 170) are open-entry/open-exit, meaning students may complete courses at an accelerated pace and move on to a subsequent course upon satisfactory completion of the preceding course.

**Career opportunities:** Project Manager: $75,474  Job Growth: 12% through 2020

*Mean salaries nationwide as of 2018. Source: glassdoor.com*

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

<table>
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BUSINESS MANAGEMENT – PROJECT MANAGEMENT SPECIALIZATION

THIRD SEMESTER

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FOURTH SEMESTER

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Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

PROJECT MANAGEMENTG3

Award: Career Studies Certificate  Plan Code: 221-212-21  CIP Code: 52.0299

Project Management is a rapidly growing field relevant to many business areas, including information technology, engineering, contracting, or the nonprofit sector. The CSC is a completely online, self-paced program for individuals who have already obtained a degree, those who wish to add to their credentials, and students who are concurrently pursuing an associate degree.

Program Coordination: The Project Management CSC feeds directly into the Business Management degree with a specialization in Project Management.

Course Sequence

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Minimum credits: 17

Length: 1 semester to 1 year, depending upon student’s level of time and motivation. Courses in project management (BUS 204, 206, 295, and ITP 170) are open-entry/open-exit, meaning that students may complete courses at an accelerated pace and move on to a subsequent course upon satisfactory completion of the preceding course.

Career opportunities: Project Manager: $75,474; Job Growth: 12% through 2020

*Mean salaries nationwide as of 2018. Source: glassdoor.com

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
BUSINESS ADMINISTRATION

Award: Associate of Arts & Science

Plan Code: 216  CIP Code: 24.0101

This degree is designed for students planning to transfer to a four-year university to study Business Administration, Accounting, Business Information Systems, Economics, Finance, Marketing, or Management. Students have sufficient flexibility to select courses appropriate to the requirements of their intended transfer institution. Students should complete a DCC program comparable to the first two years of the program at the transfer institution. DCC is accredited by Alpha Beta Gamma International Business Honor Society to initiate members into the honor society for business and related disciplines. For more information, refer to www.abg.org.

Program Outcomes: Graduates will be able to:
1. Discuss the ethical, legal, and regulatory parameters of business.
2. Calculate, compile, and analyze business data for problem-solving.
3. Analyze appropriate current and emerging technologies to support business functions.
4. Use verbal, nonverbal, and written communication skills effectively.
5. Use critical thinking skills in problem analysis.

Program INFO
Minimum credits: 61
Length: 4 semesters (2 years) if suggested full-time course sequence is followed
Transfer Opportunities: Admission requirements vary by institution. Students are urged to familiarize themselves with the requirements of the college to which they intend to transfer and plan course selections with their DCC advisor. To learn more, visit danville.edu/transfer
Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

Course Sequence

FIRST SEMESTER
BIO 101 General Biology I or
CHM 101 General Chemistry I or
CHM 111 College Chemistry I or
ENG 111 College Composition I
HIS 101 History of Western Civilization I or
HIS 121 U.S. History I
MTH 161 Precalculus I
SDV 100 College Success Skills
Total 13 3 16 14

SECOND SEMESTER
BIO 102 General Biology II or
CHM 102 General Chemistry II or
CHM 112 College Chemistry II or
BUS 147 Intro. to Business Information Systems
ENG 112 College Composition II
HIS 102 History of Western Civilization II or
HIS 122 U.S. History II (or approved elective)
MTH 261 Applied Calculus
Total 14 5 19 16

THIRD SEMESTER
ACC 211 Principles of Accounting I
BUS 221 Business Statistics I
ECO 201 Principles of Macroeconomics
Humanities Elective
Social Science Elective
PED/HLT Physical Ed/Health
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FOURTH SEMESTER

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SMALL BUSINESS MANAGEMENT

**Award:** Career Studies Certificate

**Plan Code:** 221-212-24  **CIP Code:** 52.0703

This CSC is primarily designed for students (1) who are taking a career studies certificate program that may be turned into a business venture, or (2) who have already obtained a skill that can be turned into a business venture. Students will be exposed to the following: essentials of small business accounting; people-management skills necessary for hiring, motivating, and supervising employees; business planning and financial forecasting skills; fundamentals of obtaining small business start-up funding; laws and regulations associated with small business ownership; customer service techniques; and small business marketing techniques with a possible emphasis on internet marketing, including social networking and basic web design. When seeking to launch a business venture, the more expertise and skill one can obtain in a marketable profession (air conditioning, photography, web design, etc.), the odds of success increase.

**Program Outcomes:** Graduates of this program will be able to:

1. Create a business plan that can be used to start and fund a small business start-up or expansion;
2. Perform small business accounting tasks and understand the forms and documents associated with managing a small business accounting system;
3. Demonstrate human relationship skills used to successfully interrelate with customers, associates, employees, and superiors in a business setting;
4. Explain essential legal and regulatory requirements for small business;
5. Recognize the features, advantages, and disadvantages of business ownership categories (e.g., proprietorship, partnership, corporation, etc.);
6. Develop marketing strategies for successful products and services.

**Course Sequence**

**REQUIRED:**

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**Program Info**

**Minimum credits:** 20

**Length:** 1-2 semesters

**Career opportunities:** Earnings for small business owners will vary based on the type of business, location, and other factors. The top five industries of high-growth firms in 2018 were: 1) IT Services, 2) Advertising & Marketing, 3) Business Products & Services, 4) Health, and 5) Software. Since the recession of 2009-11, small businesses have accounted for 67% of net new jobs.

**Sources:** Kauffman Foundation & U.S. Small Business Association

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

Continued on next page
**SMALL BUSINESS MANAGEMENT**

**CHOOSE ONE OF THE FOLLOWING:**
- MKT 110 Principles of Selling
- MKT 216 Retail Organization & Management
- MKT 228 Promotion
- MKT 281 Principles of Internet Marketing

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**CHOOSE ONE OF THE FOLLOWING:**
- ITE 115 Intro to Computer Applications & Concepts
- ITD 115 Web Page Design & Site Management

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**CHOOSE ONE OF THE FOLLOWING:**
- BUS 236 Communications in Management
- CST 100 Principles of Public Speaking

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**CHOOSE ONE OF THE FOLLOWING:**
- BUS 298 Seminar & Project
- BUS 297 Cooperative Education*

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**REQUIRED:**
- BUS 199 Supervised Study**
- BUS 299 Supervised Study***

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| Total Credits | 19 | 2 | 21-33* | 20 |

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*If a student participates in BUS 297, Cooperative Education, contact hours would equate to 15 hours of internship-style work per week for the duration of the semester.

**Create thorough business plan in BUS 165, participate in the Barkhouser Free Enterprise Center Small Business Idea Fair, work with mentors already in a similar business.

***Enhance business plan initially developed in BUS 165, participate in business counseling with the Launch Place and/or the Longwood SBDC, visit with funding sources; and possibly launch business venture.
TECHNICAL STUDIES VENTURE CREATION AND MANAGEMENT (AKA “BUILD YOUR BUSINESS”)

Award: Associate of Applied Science

Plan Code: 718-10  CIP Code: 15.0612

The Venture Creation program teaches students the skills to launch and manage their own viable small business venture. The curriculum consists of a 20-credit core of financial, marketing, management, and IT courses, paired with 18 credits of general education and 31 credits of courses in a specialty skill area of the student’s choice. Examples of specialty skill area Career Studies Certificates include Air Conditioning, Auto Body, Cosmetology, Child Care, Digital Art & Design, Digital Photography, Hospitality, Precision Machining, Website Design, Welding, and many others.

Students with prior relevant DCC coursework may be eligible to receive advanced standing credit for some requirements. Additional electives may include courses to enhance the student's entrepreneurial skills, such as Buying, Retailing, Internet Marketing, Professional Selling, Supervision, Business Law, Web Design, etc. Students must select courses with approval of the program advisor to develop a true skill set associated with operating an independent business venture.

Program Integration: In addition to earning the A.A.S. degree, program graduates will have earned the Small Business Management CSC and one to two additional CSCs in their chosen specialty area.

Program Outcomes: Graduates of this program will be able to:

1. Perform a service or generate a product that can feasibly be marketed as the foundation of a business venture;
2. Create a business plan that can be used to start & fund a small business start-up or expansion;
3. Perform small business accounting tasks & understand the forms & documents associated with managing a small business accounting system;
4. Demonstrate human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Explain essential legal & regulatory requirements for small business;
6. Recognize the features, advantages, & disadvantages of business ownership categories (e.g., proprietorship, partnership, corporation, etc.); and
7. Develop marketing strategies for successful products and services.

Course Sequence

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITE 115</td>
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<td>ENG 111</td>
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<tr>
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<td>SDV 100</td>
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<td>Electives</td>
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Total: 16 Hours

SECOND SEMESTER

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<th>Course</th>
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<td>FIN 215</td>
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<td>ECO 120</td>
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Total: 20 Hours

Lecture Lab Hours in Class Credits

3 0 3 3
3 0 3 3
4 0 4 2
1 0 1 1
9 0 9 9
16 4 20 18

Business & Marketing • 95
### LOGISTICS MANAGEMENT

**Award:** Career Studies Certificate  
**Plan Code:** 221-370-01  
**CIP Code:** 52.0299

Logistics is a rapidly growing field encompassing the care and management of inventory while at rest and in motion. The DCC Logistics Management CSC is offered completely online and meant to be completed on a part-time basis to accommodate the schedules of working professionals. The program is primarily designed to provide formal training for individuals already employed in logistics-related jobs, such as: Inventory management, care and control; dispatching and shipping of goods and materials; and assembling bulk orders for distribution. This program is suitable for students seeking career advancement or an entry level position in warehousing and distribution. Course topics include essentials of distribution and transportation management; inventory management; the role of retailing and wholesaling in the supply chain; people management skills necessary for

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*Supervised study courses will include one-on-one business counseling and assistance from professors and partner organizations such as the Launch Place and Longwood University Small Business Development Center.

**If a student participates in BUS 297, Cooperative Education, hours in class would equate to 15 hours of internship-style work per week for the duration of the semester.*
supervising warehouse and transportation employees; and warehouse organization and management.

**Admission Requirements:** In addition to general college admission requirements, as an online program, it is expected that applicants will be proficient with Internet navigation, e-mail, Microsoft Word, and Microsoft Excel.

**Program Integration:** The courses in the Logistics Management Career Studies Certificate will transfer to the Marketing – Warehousing and Distribution Specialization Associate of Applied Science Degree program.

**Program Outcomes:** Graduates will be able to:

1. Demonstrate competency in presentation skills including organization, eye-contact, volume, pacing, and visual aids, utilizing a wide variety of computer software tools to enhance business communication media including written reports and business plans;
2. Perform and interpret basic business math calculations (e.g., mark-ups, interest rates, ratios, etc.), business accounting principles, basic financial reports and bookkeeping fundamentals;
3. Explain the basic concepts associated with business ethics and the importance of developing and adhering to a strong set of generally-accepted ethical principles;
4. Demonstrate basic principles of human relationship skills which can be used to successfully interrelate with customers, associates, employees, and superiors in a business setting;
5. Understand basic economics, various economic systems, legal and regulatory requirements for business and industry and their impact on business;
6. Think logically and analytically in proposing plans and creating strategies including layout, material handling, communications, shipping utilities, and building design that may be considered in complex warehousing and logistics issues facing organizations; and
7. Differentiate the concepts necessary to address warehouse and logistics trade-offs between space and time in optimizing a modern warehousing and logistics organization while recognizing the social and ethical responsibilities within an organization to function effectively in the environment.

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<td>BUS 255</td>
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**MARKETING – ELECTRONIC COMMERCE SPECIALIZATION**

**Award:** Associate of Applied Science

**Plan Code:** 251-02  **CIP Code:** 52.0299

The e-commerce specialization is designed for students interested in web design and internet marketing in business-to-business (B2B) and business-to-consumer (B2C) transactions. It closely mirrors coursework required of other Marketing A.A.S. specializations and the A.A.S. in Business Management-Management Specialization. As such, a student may earn a second A.A.S. degree by taking 15 additional credits (five 3-credit courses).

**Program Outcomes:** Graduates will be able to:

1. Demonstrate competency in presentation skills, including organization, eye-contact, volume, pacing, & visual aids, utilizing a wide variety of computer software tools to enhance business communication media, including written reports & business plans;
2. Perform & interpret basic business math calculations (e.g.,
3. Explain basic concepts associated with business ethics & the importance of developing and adhering to a strong set of generally-accepted ethical principles;
4. Demonstrate basic principles of human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Describe basic economics, various economic systems, legal & regulatory requirements for business & industry, & their impact on business;
6. Create, develop, and update attractive, fully-functional web pages using a variety of industry-standard web editing software products; and
7. Relate how electronic commerce strategies and web design techniques fit into an organization’s overall marketing plan including basic web programming (i.e., Java), electronic payment systems, and back-end applications (i.e., Microsoft Access).

## Course Sequence

### FIRST SEMESTER

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<th>Course Title</th>
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<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
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<td>BUS 121</td>
<td>Business Mathematics I</td>
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<td>ENG 111</td>
<td>College Composition I</td>
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<td>ITE 115</td>
<td>Intro to Computer Applications &amp; Concepts</td>
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<td>MKT 100</td>
<td>Principles of Marketing</td>
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### SECOND SEMESTER

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<td>Principles of Management</td>
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<td>Web Design I</td>
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<td>Principles of Internet Marketing</td>
<td>3</td>
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<td>ECO 120</td>
<td>Survey of Economics</td>
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### THIRD SEMESTER

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<td>Principles of Accounting I</td>
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<td>Basic Human Biology</td>
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<td>MKT 216</td>
<td>Retail Organization &amp; Management</td>
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<td>MKT 228</td>
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**Total** 18 0 18 18

### FOURTH SEMESTER

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<td>Business Etiquette</td>
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<td>Workplace Ethics</td>
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<td>Humanities Elective</td>
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<td>Customer Service</td>
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<td>MKT 297</td>
<td>Cooperative Education</td>
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<td>MKT 110</td>
<td>Principles of Selling</td>
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**Total** 15 0 15 15
**MARKETING – MARKETING SPECIALIZATION**

**Award:** Associate of Applied Science

**Plan Code:** 251 **CIP Code:** 52.0299

The Marketing A.A.S. prepares students for employment in merchandising, retailing, and related careers. The program closely mirrors coursework required of other Marketing A.A.S. specializations (Electronic Commerce, Warehousing & Distribution) and the A.A.S. in Business Management-Management Specialization. As such, a student may earn a second A.A.S. degree by taking 15 additional credits (five 3-credit courses). DCC is accredited by Alpha Beta Gamma International Business Honor Society to initiate members into the honor society for business and related disciplines. For more information, refer to http://www.abg.org.

**Program Outcomes:** Graduates will be able to:

1. Show competency in presentation skills (organization, eye-contact, volume, pacing, & visual aids), using a wide variety of computer software tools to enhance communication media (written reports, business plans);
2. Perform & interpret basic business math calculations (e.g., mark-ups, interest rates, ratios, etc.), business accounting principles, basic financial reports, & bookkeeping fundamentals;
3. Explain basic concepts associated with business ethics & the importance of developing and adhering to a strong set of generally-accepted ethical principles;
4. Show basic principles of human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Describe basic economics, various economic systems, legal & regulatory requirements for business & industry, & their impact on business;
6. Identify the role & practice of marketing, including theoretical & applied aspects & its basic legal & regulatory standards within an organization; and
7. Analyze marketing problems & issues facing companies/organizations in order to conceptualize possible alternative solution action plans.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<th>Credits</th>
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<tr>
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<tr>
<td>AST 117</td>
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<tr>
<td>ACC 111</td>
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*Mean salaries nationwide as of 2018
Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

Continued on next page
MARKETING – MARKETING SPECIALIZATION

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<tr>
<td>ECO 120</td>
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Total: 15 Credits

FOURTH SEMESTER

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<td>Introduction to Computerized Accounting</td>
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<td>Business Etiquette</td>
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<td>MKT 170</td>
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<td>MKT 227</td>
<td>Merchandise Buying and Control</td>
<td>3</td>
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<td>Cooperative Education</td>
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<td>MKT 281</td>
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<td>Preparation for Employment</td>
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Total: 18 Credits

MARKETING – MARKETING SPECIALIZATION

Award: Associate of Applied Science

Plan Code: 251-01  CIP Code: 52.0299

This program prepares students for careers involving the care and control of stock, dispatching goods and materials, and assembling bulk orders for distribution. It closely mirrors coursework required of other Marketing A.A.S. specializations and the Business Management-Management Specialization. A.A.S. As such, a student may earn a second A.A.S. degree by taking 15 additional credits (five 3-credit courses). Also, courses in the Logistics Management CSC transfer directly into this degree program.

Program Outcomes: Graduates will be able to:
1. Demonstrate competency in presentation skills, including organization, eye-contact, volume, pacing, & visual aids, utilizing a wide variety of computer software tools to enhance business communication media, including written reports & business plans;
2. Perform & interpret basic business math calculations (e.g., mark-ups, interest rates, ratios, etc.), business accounting, basic financial reports, & bookkeeping fundamentals;
3. Understand basic concepts associated with business ethics & the importance of developing and adhering to a strong set of generally-accepted ethical principles;
4. Demonstrate basic principles of human relationship skills used to successfully interrelate with customers, associates, employees, & superiors in a business setting;
5. Understand basic economics, various economic systems, legal & regulatory requirements for business & industry, & their impact on business;
6. Think logically & analytically in proposing plans & creating strategies including layout, material handling, shipping utilities, communications, & building design that may be considered in complex warehousing & logistics issues; and
7. Understand concepts necessary to address warehouse & logistics trade-offs between space & time in optimizing a modern warehousing and logistics organization, while recognizing the social & ethical responsibilities within an organization to function effectively in the environment.

MARKETING – WAREHOUSING & DISTRIBUTION SPECIALIZATION

PROGRAM INFO

Minimum credits: 66

Length: 4 semesters (2 years), if full-time suggested course sequence is followed

Career opportunities:
- Shipping, Receiving, and Traffic Clerks: $34,980
- Transportation and Material Moving Occupations: $38,290
- First-Line Supervisors of Transportation: $58,140

*Mean salaries nationwide as of 2018
Source: BLS.gov

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

Continued from previous page
# Marketing - Warehousing & Distribution Specialization

## Course Sequence

### First Semester

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Lab Hours</th>
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<th>Credits</th>
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<td>BUS 100 Introduction to Business</td>
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<td>ENG 111 College Composition I</td>
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<td>BUS 236 Communications in Management</td>
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### Third Semester

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<td>BIO 100 Basic Human Biology</td>
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<td>BUS 223 Distribution &amp; Transportation</td>
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### Fourth Semester

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<td>ACC 110 Introduction to Computerized Accounting</td>
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<td>BUS 108 Business Etiquette</td>
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<td>BUS 149 Workplace Ethics</td>
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<td>MKT 170 Customer Service</td>
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<td>MKT 227 Merchandise Buying and Control</td>
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<td>BUS 255 Inventory &amp; Warehouse Management</td>
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<td>SDV 106 Preparation for Employment</td>
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Computer Science & Information Technology

DCC Computer Science and IT programs prepare graduates for well-paying and in-demand careers in cyber security, database administration, software and mobile app development, network architecture, computer support, and more. DCC offers pathways suitable for high school students, first-time college students, or existing IT employees seeking to upgrade their skills for professional advancement.

Small Unmanned Aircraft Systems (sUAS) (CSC) .............................................................................................................. 103

College Transfer:
Science – Computer Science Specialization (AA&S) ........................................................................................................... 104

Cyber Security:
Cyber Security (CERT) .................................................................................................................................................. 105
Cyber Security Technician (CSC) ................................................................................................................................. 106

Note: For the Cyber Crime Investigation Certificate, please see the Criminal Justice & Public Safety Section

Database Administration:
Advanced Database Development (CSC) ...................................................................................................................... 107
Information Systems Data Analyst (CSC) ....................................................................................................................... 108

Desktop Software:
Desktop Applications (CSC) ........................................................................................................................................ 108

IT Support:
Information Systems Management (CSC) ...................................................................................................................... 109
Information Systems Technician (CSC) ......................................................................................................................... 109
Information Technology Support Specialist (CSC) ......................................................................................................... 110

Networking:
Cyber Security and Networking Foundations (CERT) .................................................................................................. 111
Information Systems Technology Network Engineer (AAS) ......................................................................................... 112
Information Systems Technology Network Engineer-Cyber and Network Security Specialization (AAS) .............. 113
Network Technology (CSC) ........................................................................................................................................ 115
Network Virtualization Technologies (CSC) .................................................................................................................. 116
Networking Technology Fundamentals (CSC) ................................................................................................................ 116
Networking with CISCO/CCNA (CSC) ......................................................................................................................... 117

Software/App Development:
Information Systems Technology – Gaming and Mobile Application Design Specialization (AAS) ...................... 118
Information Systems Technology – Software Development Specialization (AAS) .................................................. 119
Mobile Application Development (CSC) ....................................................................................................................... 120
Software Development (CSC) .................................................................................................................................. 121

Website Development:
Website Design (CSC) ............................................................................................................................................... 122
Website Programming (CSC) .................................................................................................................................. 122
Small unmanned aerial systems, or drones, as they are commonly known, have a variety of uses in diverse fields such as precision agriculture, real estate, search and rescue, photography, and more!

This program includes training in the operation, maintenance, navigation and programming of drones. The skills obtained in this program can lead to entry level positions in the field of drone applications and flight control or provide a pathway to promotion. Included in the training will be (1) RC software Manipulations; (2) Repair, Maintenance and Modifications; (3) GPS, GIS and Map Point Drafting; (4) Drone Programming and Data Management; (5) Preparation for the 107 industry certification exam.

Industry Certifications: This program includes training leading to the preparation and setting for the 107 Industry Certification Exam.

Program Outcomes: Graduates of this program will demonstrate:
1. Knowledge of drone technologies and terminologies and their uses and applications.
2. Knowledge to use remote control (RC) software to manipulate drones.
3. Ability to repair, maintain and modify drones.
4. Ability to navigate drones through GPS, GIS and Map Point Drafting
5. Identify and utilize drone programming, data management, archiving and manipulations of data, data mining and report generation.
6. Employment skills in the field of Drone technologies.

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<th>Lab Hours</th>
<th>Hours in Class</th>
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<td>UMS 177 Small Unmanned Aircraft Systems (sUAS) Components &amp; Maintenance</td>
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<tr>
<td>GIS 293 Small Unmanned Aircraft Systems (sUAS) Navigation &amp; Deployment</td>
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<td>UMS 112 Small Unmanned Aircraft Systems (sUAS) Program &amp; Flight Data Management</td>
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<td>UMS 107 Small Unmanned Aircraft Systems (sUAS) Remote Pilot Ground School</td>
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This degree is designed for students planning to transfer to a four-year college or university to study computer science, information technology, or computer security. The program is similar to the A.A.S. in Science in its core course sequence. Students should complete a DCC program comparable to the first two years of the program at the transfer institution.

Program Outcomes: Graduates will be able to:
1. Explain how the disciplines of science and math differ from other disciplines.
2. Conduct experiments, record and interpret data.
3. Relate the significance of math to all areas of science.
4. Communicate appropriately within the respective disciplines of math and science.
5. Work independently and collaboratively in the acquisition of scientific knowledge.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
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<td>MTH 167 Precalculus with Trigonometry</td>
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<td>CSC 205 Computer Organization</td>
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<tr>
<td>Natural Lab Science</td>
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| SECOND SEMESTER |
| ENG 112 College Composition II | 3 | 0 | 3 | 3 |
| HIS History Elective I | 3 | 0 | 3 | 3 |
| Natural Lab Science II | 3 | 3 | 6 | 4 |
| Literature Elective I | 3 | 0 | 3 | 3 |
| Social Science Elective I | 3 | 0 | 3 | 3 |
| Total | 15 | 3 | 18 | 16 |

| THIRD SEMESTER |
| CSC 201 Computer Science I | 4 | 0 | 4 | 4 |
| MTH 263 Calculus I | 4 | 0 | 4 | 4 |
| Natural Lab Science III | 3 | 3 | 6 | 4 |
| HIS History Elective II | 3 | 0 | 3 | 3 |
| HLT/PED Elective | 1 | 0 | 1 | 1 |
| Total | 15 | 3 | 18 | 16 |

| FOURTH SEMESTER |
| CSC 202 Computer Science II | 4 | 0 | 4 | 4 |
| MTH 264 Calculus II | 4 | 0 | 4 | 4 |
| Literature II | 3 | 0 | 3 | 3 |
| Social Science Elective II | 3 | 0 | 3 | 3 |
| Total | 14 | 0 | 14 | 14 |

1 Students must complete 12 credit hours of lab science coursework. Acceptable science courses are: CHM 111-112 College Chemistry I-II; BIO 101-102 General Biology I-II; BIO 141-142 Human Anatomy and Physiology I-II; GOL 105 Physical Geology & GOL106 Historical Geology. Acceptable 200-level laboratory science sequences are: CHM 241-242 Organic Chemistry I-II with lab; PHY 201-202 General College Physics I-II; PHY241-242 University Physics I-II.

2 Acceptable literature sequences are: ENG241-242 Survey of American Literature I-II; ENG243-244 Survey of English Literature I-II; ENG251-252 Survey of World Literature I-II; ENG253-254 Survey of African-American Literature I-II.

3 Students must complete a full year of social science coursework by taking one of the following: ECO 201 or ECO 202, or PLS 211 and PLS 212; or SOC200 and 1 sophomore-level sociology course, or PSY 200 and 1 sophomore-level psychology course.
Award: Certificate

Plan Code: 344  CIP Code: 11.1003

Admission Requirements: The Cyber Security program is designed for individuals with prior work and/or educational experience relevant to the field. Candidates must meet one or more of the following criteria, as determined by the Cyber Center Director, before entering the program:

1. Professional background in IT Networking. Individual may be required to demonstrate required skills.
2. Industry Certifications in the field of Networking and/or Security. Candidates will be required to provide evidence of successful completion of each certification being considered.

Those with a criminal history will not be able to find employment in cyber security. Students must complete a background check prior to entering the program.

Industry Certifications:
- CompTIA Security+
- Certified Ethical Hacker
- Cisco Certified Network Associate
- Security

Program Coordination: This certificate shares five courses (18 credits) with the Cyber Security Technician CSC and four courses (11 credits) with the Information Systems Technology Network Engineer A.A.S.

Program Outcomes: Graduates of this program will be able to:
1. Identify security risks to computing resources.
2. Assess potential threats to computing resources.
3. Develop effective countermeasures aimed at protecting data and computer assets.
5. Identify infrastructure components and the roles they serve, and design infrastructures including devices, topologies, protocols, systems software, management and security.
6. Explain the concepts of confidentiality, availability and integrity in information assurance, including physical, software, devices, policies and people.

Course Sequence

<table>
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<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>FIRST SEMESTER</td>
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<tr>
<td>ADJ 161 Introduction to Computer Crime</td>
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<td>ITE 221 PC Hardware and OS Architecture</td>
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<td>ITN 260 Network Security Basics</td>
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<tr>
<td>SDV100 College Success Skills</td>
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| SECOND SEMESTER | | | |
| Humanities Elective | 3 | 0 | 3 | 3 |
| ITN 261 Network Attacks, Computer Crime & Hacking | 3 | 0 | 3 | 3 |
| ITN 262 Network Communication, Security & Authentication | 4 | 0 | 4 | 4 |
| Total | 10 | 0 | 10 | 10 |

| THIRD SEMESTER | | | |
| ENG 111 College Composition I | 3 | 0 | 3 | 3 |
| ITN 263 Internet/Intranet Firewalls & E-Commerce Security | 4 | 0 | 4 | 4 |
| ITN 276 Computer Forensics I | 4 | 0 | 4 | 4 |
| Total | 11 | 0 | 11 | 11 |

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov*
FOURTH SEMESTER

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<td>Virtual Infrastructure: Installation &amp; Configuration</td>
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<td>ITN 277</td>
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</table>

DCC is the first rural community college in Virginia to be recognized by the Department of Homeland Security and National Security Agency as a National Center of Academic Excellence in Cyber Defense Two-Year Education. Courses are aligned with DHS and NSA curriculum standards.

PROGRAM INFO

This program is offered part-time and completely online.

**Minimum credits:** 25

**Length:** 2 semesters

**Career opportunities:**
- Information Security Analyst: **$102,470**
- Job growth: **18%** from 2014 to 2024
- Computer Systems Analyst: **$93,610**
- Job growth: **21%**

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

106 • Danville Community College
Award: Career Studies Certificate

Plan Code: 221-299-14

CIP Code: 11.0802

Program Outcomes: Graduates of this program will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
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<td>ITP 200 Data Structure &amp; Algorithms</td>
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<td>ITD 256 Advanced Database Management</td>
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<td>ITD 260 Data Modeling &amp; Design</td>
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<td>ITD 250 Database Architecture &amp; Administration</td>
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</tbody>
</table>

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

ADVANCED DATABASE DEVELOPMENT

This program is designed for students who have already completed a two-year software development program or have equivalent work experience. Admission criteria will be at the discretion of the instructor.

Minimum credits: 18
Length: 2 semesters
Career opportunities: Database Administrator
$33,000-42,930

Job growth: 11% from 2014 to 2024
With a bachelor’s degree, median salary: $84,950
Job growth: 21%

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Career opportunities: Database Administrator
$33,000-42,930

Minimum credits: 18
Length: 2 semesters
Career opportunities: Database Administrator
$33,000-42,930

Program Outcomes: Graduates of this program will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
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6. Use instructional applications and material which could lead to industry certifications.

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<table>
<thead>
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<th>Course Sequence</th>
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<td>FIRST SEMESTER</td>
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<tr>
<td>ITP 200 Data Structure &amp; Algorithms</td>
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<td>ITD 256 Advanced Database Management</td>
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<td>ITD 260 Data Modeling &amp; Design</td>
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</table>
INFORMATION SYSTEMS DATA ANALYST

Award: Career Studies Certificate

Plan Code: 221-299-74    CIP Code: 11.0802

Program Coordination: Four courses (14 credits) of this CSC are counted towards the A.A.S. in Software Development.

Program Outcomes: Graduates of this program will be able to:
1. Apply analytical and problem solving skills for computer system designs, planning, and support.
2. Apply current IT industry standards, protocols, and techniques.

Industry Certifications: MTA - Database; MTA - Software Development; MOS certification in Word, Excel & PowerPoint.

Course Sequence
ITE120  Principles of Information Systems  3 0 3 3
ITE140  Spreadsheet Software  3 0 3 3
ITD 132  Structured Query Language  3 0 3 3
ITP 136  C# Programming I  4 0 4 4
ITP 244  ASP.NET - Server Side Programming  4 0 4 4

Total 17 0 17 17

Minimum credits: 17
Length: 1 - 2 semesters
Career opportunities: Database Administrator
$42,930
Job growth: 11% from 2014 to 2024

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

DESKTOP APPLICATIONS

Award: Career Studies Certificate

Plan Code: 221-299-01    CIP Code: 11.0101

Program Outcomes: Graduates of this program will be able to:
1. Demonstrate proficiency in the fundamental information technology skills required to provide user support in business.
2. Apply current industry standards, protocols and techniques; and keep up with evolving technology to maintain professional proficiency.

Industry Certifications: CIW - Web Design; MOS certification - Word, Excel, & PowerPoint; Adobe InDesign.

Course Sequence
AST 253  Advanced Desktop Publishing I  3 0 3 3
AST 238  Word Processing Advanced Operations  3 0 3 3
ITD 115  Webpage Design & Site Mgmt.  3 0 3 3
ITE 115  Intro to Computer Applications & Concepts OR
ITE 140  Spreadsheet Software  3 0 3 3
ITE 150  Desktop Database Software  4 0 4 4

Total 19 0 19 19

Minimum credits: 19
Length: 1 - 2 semesters
Career opportunities: Desktop Publisher: $46,750

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

108 • Danville Community College
INFORMATION SYSTEMS MANAGEMENT

Award: Career Studies Certificate

Plan Code: 221-299-73

CIP Code: 11.0101

This program prepares graduates to provide robust IT Support services to and/or fill IT Management positions.

Industry Certifications: MOS in Word, Excel, & PowerPoint.

Program Outcomes: Graduates of this program will demonstrate:
1. Proficiency in the fundamental information technology skills required to provide user support in a business setting;
2. Ability to design and plan the deployment of new technology systems; and
3. Ability to design, plan, and manage updates to technology systems.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Hours</th>
<th>Lab Hours</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BUS 204</td>
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<tr>
<td>ITE 120</td>
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<td>3 3</td>
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<tr>
<td>ITP 170</td>
<td>3</td>
<td>0</td>
<td>3 3</td>
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<tr>
<td>ITP 251</td>
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<tr>
<td><strong>Total</strong></td>
<td>16</td>
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<td>16 16</td>
</tr>
</tbody>
</table>

INFORMATION SYSTEMS TECHNICIAN

Award: Career Studies Certificate

Plan Code: 221-299-16

CIP Code: 11.0101

Industry Certifications: CompTIA A+ in software; MOS in Word, Excel, & PowerPoint.

Program Outcomes: Graduates of this program will demonstrate:
1. Problem-solving skills implementing and troubleshooting computer systems.
2. Proficiency in the fundamental information technology skills required to provide user support in a business setting.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Hours</th>
<th>Lab Hours</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETR 149</td>
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<td>ETR 295</td>
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<tr>
<td>ITE 120</td>
<td>3</td>
<td>0</td>
<td>3 3</td>
</tr>
<tr>
<td>ITE 182</td>
<td>3</td>
<td>0</td>
<td>3 3</td>
</tr>
<tr>
<td>ITP 225</td>
<td>3</td>
<td>0</td>
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<tr>
<td>ITN 109</td>
<td>3</td>
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<td>3 3</td>
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<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td>0</td>
<td>18 18</td>
</tr>
</tbody>
</table>

Program INFO

Minimum credits: 16

Length: 1 - 2 semesters

Career opportunities: Information Systems Manager: $37,000-47,100

(Nationwide with associate degree. Source: Monster.com

With a bachelor’s degree: $82,360-135,800

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462
Award: Career Studies Certificate

Plan Code: 221-299-21

CIP Code: 11.0101

Note: This program requires previous computing systems-related education or experience, as determined by the instructor.

Program Coordination: This program shares six credits (ITN 106 and 107) with the CSC in Networking Technology Fundamentals.

Program Outcomes: Graduates will demonstrate competency in:
1. Fundamentals of PC hardware & peripherals, mobile device hardware, networking & troubleshooting hardware & network connectivity issues.
2. How to install & configure operating systems including Windows, iOS, Android, Apple OS X & Linux; security; the fundamentals of cloud computing; & operational procedures.


<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 106 Microcomputer Operating Systems</td>
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</tr>
<tr>
<td>ITN 107 PC Hardware &amp; Troubleshooting</td>
<td>3</td>
<td>0</td>
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<td>3</td>
</tr>
<tr>
<td>ITN 201 Administration &amp; Management of Network Infrastructures</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ITN 245 Network Troubleshooting</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ITN 257 Cloud Computing: Infrastructure &amp; Services</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ITN 260 Network Security Basics</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>0</strong></td>
<td><strong>18</strong></td>
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</table>

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462
Award: Career Studies Certificate

CIP Code: 11.0101

Purpose: This Career Studies Certificate leads to entry-level employment opportunities in the cybersecurity and networking fields. This curriculum prepares students for introductory IT knowledge and skills and to recognize, prevent and defend against threats to information and information systems. Students need to be introduced to the basic topics of operating systems, computer hardware, networking concepts, programming, and cybersecurity core topics in order to be well prepared and successful in all areas of IT including cyber security and networking.

Program Coordination: All credits in this certificate transfer into the IST- Network Engineer AAS degree.

Program Outcomes: Graduates will demonstrate knowledge of:
1. Problem-solving skills implementing and troubleshooting networked systems.
2. Proficiency in the fundamental information technology skills required to provide user support in a business setting.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITP 100</td>
<td>Software Design</td>
<td>3</td>
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<td>ITE 221</td>
<td>PC Hardware and OS Architecture</td>
<td>3</td>
<td>0</td>
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<tr>
<td>ITN 154</td>
<td>Network Fundamentals, Router Basics, &amp; Configuration (ICND1) - Cisco</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>ITN 103</td>
<td>Administration of Networked Servers</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>ITN 260</td>
<td>Network Security Basics</td>
<td>3</td>
<td>0</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>15</strong></td>
<td><strong>4</strong></td>
<td><strong>19</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
This program emphasizes designing, creating, and maintaining local area networks and wide area networks, including software management, voice telephony services, switches, firewalls, routers, servers, workstations, and virtualization technologies. Virtualization courses include VMware ICM, O&S, Virtual Desktop Infrastructure, Hyper-V, and SAN and NAS Storage Technologies.

Program Coordination: Credits earned in the Network Technology and Networking Technology Fundamentals CSC may count towards the requirements of this degree.

Industry Certifications:
- Cisco Certified Entry Technician (CCENT)
- Cisco Certified Network Associate (CCNA)
- Microsoft Technology Associate (MTA) Networking & Server
- CompTIA A+ Hardware & Software
- Microsoft Certified Professional (MCP)
- Microsoft Certified Solutions Associate (MCSA) Windows Server
- VMware Certified Associate (VCA)

Program Outcomes: Graduates will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

Course Sequence

FIRST SEMESTER
- AST 114 Keyboarding for Information Processing1 2 0 2 2
- ITP 100 Software Design 3 0 3 3
- ITE 221 PC Hardware & OS Architecture 3 0 3 3
- ITN 154 Network Fundamentals, Router Basics, & Configuration (ICND1) - Cisco 3 2 5 4
- MTH 130 Fundamentals of Reasoning (or approved sub) 3 0 3 3
- SDV 100 College Success Skills 1 0 1 1

Total 15 2 17 16

SECOND SEMESTER
- ITN 260 Network Security Basics 3 0 3 3
- BUS 236 Communications in Management 3 0 3 3
- ECO 120 Survey of Economics 3 0 3 3
- ITN 102 Intro to Networked Client Operating Systems (LAN) 3 2 5 4
- ITN 155 Switching, Wireless, & WAN Technologies (ICND2) - Cisco 3 2 5 4

Total 15 4 19 17

Continued on next page
THIRD SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 131</td>
<td>Technical Report Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ETR 149</td>
<td>PC Repair</td>
<td>3</td>
</tr>
<tr>
<td>HLT/PED</td>
<td>Wellness Elective</td>
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<tr>
<td>HUM</td>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITN 103</td>
<td>Administration of Networked Servers</td>
<td>3</td>
</tr>
<tr>
<td>ITN 156</td>
<td>Basic Switching &amp; Routing - Cisco</td>
<td>3</td>
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FOURTH SEMESTER

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</thead>
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<td>Virtual Infrastructure: Installation &amp; Configuration</td>
<td>4</td>
</tr>
<tr>
<td>ITN 104</td>
<td>Maintaining Servers in the Networked Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>ITN 157</td>
<td>WAN Technologies - Cisco</td>
<td>3</td>
</tr>
<tr>
<td>ITN 209</td>
<td>Voice Over Internet Protocol</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

1 Students having prior keyboarding experience may request testing out.

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

INFORMATION SYSTEMS TECHNOLOGY NETWORK ENGINEER-CYBER & NETWORK SECURITY SPECIALIZATION G3

**Award:** Associate of Applied Science

**Plan Code:** 299-05  **CIP Code:** 11.0101

This program meets entry-level needs for networking, internet, and cyber security related professions, with no prior experience needed to enter. Many courses in the program are offered online in synchronous classes.

**Note:** A student with a criminal history will not be able to find employment in cyber security. Students must complete a background check prior to entering the program.

**Program Coordination:** Credits earned in the Cyber Security Technician CSC and Cyber Security Certificate apply towards the requirements of this degree. This program also shares coursework with the IST Network Engineer A.A.S.

**Industry Certifications:** Students will have the opportunity to earn the following:
- Cisco CCENT (Cisco Certified Entry Network Technician)
- Cisco CCNA (Cisco Certified Network Associate)
- CompTIA A+
- CompTIA Security+
- CompTIA Linux+
- Microsoft MTA (Microsoft Technology Associate): Server Infrastructure, Network, IT Infrastructure
- Cisco CCNA - Security
- VMware Certified Associate
- CEH (Certified Ethical Hacker) - Upon graduation and additional study

**Program Info**

- **Minimum credits:** 65
- **Length:** 2 years
- **Career opportunities:** Information Security Analyst: $102,470; Job Growth: 18%
- Data Communications Specialist: $31,700-81,430; Job Growth: 8% from 2014 to 2024
- Computer Systems Analyst: $93,610; Job Growth: 21% from 2014 to 2024

*Mean salaries nationwide as of 2018 Source: BLS.gov*

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

**Continued on next page**
Program Outcomes: Graduates of this program will be able to:

1. Use and apply a basic knowledge of Cisco Systems routers, switches, VLANs, and device security, including network devices
2. Install, configure, and apply security management principles to desktop and operating systems
3. Install, configure, and manage virtual infrastructure environments
4. Demonstrate knowledge of security basics, including network attacks, computer crime, and hacking fundamentals
5. Utilize introductory digital forensics techniques and skills

Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
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<tr>
<td><strong>FIRST SEMESTER</strong></td>
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<td>HUM Humanities Elective</td>
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<td>ITE 221 PC Hardware &amp; OS Architecture</td>
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<tr>
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<td>3</td>
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<tr>
<td>MTH 130 Fundamentals of Reasoning (or approved sub)</td>
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<tr>
<td>BUS 236 Communications in Management</td>
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<td>0</td>
<td>3</td>
<td>3</td>
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<tr>
<td>ECO 120 Survey of Economics</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
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<tr>
<td>ITN 103 Administration of Networked Servers</td>
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<td>2</td>
<td>5</td>
<td>4</td>
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<tr>
<td>ITN 155 Switching, Wireless, &amp; WAN Technologies (ICND2) - Cisco</td>
<td>3</td>
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<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>4</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td><strong>THIRD SEMESTER</strong></td>
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<td></td>
<td></td>
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<tr>
<td>ENG 131 Technical Report Writing I</td>
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<tr>
<td>ITN 104 Maintaining Servers in the Networked Infrastructure</td>
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<tr>
<td>ITN 261 Network Attacks, Computer Crime, &amp; Hacking</td>
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<tr>
<td>ITN 156 Basic Switching &amp; Routing - Cisco</td>
<td>3</td>
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<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>4</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td><strong>FOURTH SEMESTER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITN 254 Virtual Infrastructure: Installation &amp; Configuration</td>
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<tr>
<td>ITN 262 Network Communication, Security and Authentication</td>
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<td>ITN 157 WAN Technologies - Cisco</td>
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<td>5</td>
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<tr>
<td>ITN 209 Voice Over Internet Protocol</td>
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<td>ITN 276 Computer Forensics I</td>
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<td>18</td>
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</tr>
</tbody>
</table>

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
Award: Career Studies Certificate

Plan Code: 221-732-07

CIP Code: 15.0303

Program Integration: This program shares 2 courses/8 credits (ITN 154 and 155) with the Networking Technology Fundamentals and Networking with Cisco/CCNA CSCs. Courses directly transfer into the IST Network Engineer A.A.S.

Program Outcomes: Graduates of this program will be able to:
1. Implement Information Technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

Industry Certifications: Cisco Certified Entry Networking Technician (CCENT); Microsoft Technology Associate (MTA) - Networking & Server; Microsoft Certified Professional (MCP); Microsoft Certified Solutions Associate (MCSA) Windows Server.

Course Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 154</td>
<td>Network Fundamentals, Router Basics, &amp; Configuration (ICND1) - Cisco</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>ITN 155</td>
<td>Switching, Wireless, &amp; WAN Technologies (ICND2) - Cisco</td>
<td>3</td>
<td>2</td>
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<td>ETR 149</td>
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<tr>
<td>ITN 102</td>
<td>Intro to Networked Client OS (LAN)</td>
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<td>4</td>
</tr>
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<td>ITN 103</td>
<td>Administration of Networked Servers</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>ITN 104</td>
<td>Maintaining Servers in the Networked Infrastructure</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 18 10 28 23

*Advanced standing credit may be awarded to students who demonstrate proficiency or prior certification in Microsoft Windows or Linux Desktop Operating Systems.

G3 Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
NETWORK VIRTUALIZATION TECHNOLOGIES

Award: Career Studies Certificate

Plan Code: 221-299-71

CIP Code: 11.0101

This program is designed for employees in the information systems field. Due to the level of knowledge needed, students must have completed ITN 103 or provide industry certification relevant to the course material, as determined by the program instructor.

Industry Certifications: VMware VCA and VCP; NetApp Storage

Program Outcomes: Graduates of this program will demonstrate:
1. Preparation to earn the VMware VCA and VCP certifications
2. Preparation to earn the NetApp Storage certification
3. An understanding of IT certifications and their role in a successful career
4. Preparation for employment in the IT field.

Course Sequence
FIRST SEMESTER
ITN 254 Virtual Infrastructure: Installation & Configuration 4 0 4 4
ITN 213 Information Storage & Management 4 0 4 4
Total 8 0 8 8

SECOND SEMESTER
ITN 255 Virtual Infrastructure: Deployment, Security, & Analysis 4 0 4 4
ITN 231 Desktop Virtualization 4 0 4 4
Total 8 0 8 8

NETWORKING TECHNOLOGY FUNDAMENTALS

Award: Career Studies Certificate

Plan Code: 221-732-00 CIP Code: 15.0303

This program allows for the development of basic skills in routing, switching, basic PC software installation and hardware repair.

Program Coordination: This program shares 2 courses/6 credits (ITN 106 and 107) with the IT Support Specialist CSC; 2 courses/8 credits (ITN 154 and 155) with the CSCs in Network Technology and Networking with Cisco/CCNA; and provides 8 credits towards the IST Network Engineer A.A.S.

Industry Certifications: Cisco Certified Entry Networking Technician (CCENT), CompTIA A+

Program Info
Minimum credits: 16
Length: 2 semesters (1 year) part-time
Career opportunities: Computer Network Architect: $57,950
Job growth: 12%
*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov
Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

Continued on next page
Program Outcomes: Graduates of this program will demonstrate:
1. Preparation to earn the Cisco Certified Entry Networking Technician Certification.
2. Preparation to earn the CompTIA A+ Certification.
3. Recognition of IT Certifications and their role in careers.
4. Preparation for entry-level employment in the field of IT.

Program Outcomes: Graduates of this program will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

Course Sequence
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
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<td>ITN 106</td>
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<td>Network Fundamentals, Router Basics, &amp; Configuration (ICND1) - Cisco</td>
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<td>ITN 155</td>
<td>Switching, Wireless, &amp; WAN Technologies (ICND2) - Cisco</td>
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<td>ITN 107</td>
<td>PC Hardware &amp; Troubleshooting</td>
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</table>

Award: Career Studies Certificate

Plan Code: 221-732-10

CIP Code: 15.0303

Industry Certifications: Cisco Certified Entry Networking Technician; Cisco Certified Network Associate; CompTIA Network+.

Course Sequence
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 154</td>
<td>Network Fundamentals, Router Basics, &amp; Configuration (ICND1) - Cisco</td>
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<tr>
<td>ITN 155</td>
<td>Switching, Wireless, &amp; WAN Technologies (ICND2) - Cisco</td>
<td>3</td>
<td>2</td>
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<tr>
<td>ITN 156</td>
<td>Basic Switching &amp; Routing - Cisco</td>
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<td>2</td>
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<td>ITN 157</td>
<td>WAN Technologies - Cisco</td>
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</table>
INFORMATION SYSTEMS TECHNOLOGY – GAMING & MOBILE APPLICATIONS SPECIALIZATION

Award: Associate of Applied Science

Plan Code: 299-04

CIP Code: 11.0101

Program focuses on designing, creating, and maintaining video game software and computer simulations, in addition to apps for popular mobile devices. Courses include approaches to game and simulation design, developing and building mobile applications for the Google market, writing code, testing solutions/programs, project management, production aspects, and level design.

Program Coordination: Some courses in the CSCs for Mobile Application Development and Software Development count towards the requirements of this degree.

Program Outcomes: Graduates of this program will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

Course Sequence

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
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<td>ITE 115</td>
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<td>ITP 100</td>
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<tr>
<td>ITP 160</td>
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<td>MTH 130</td>
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SECOND SEMESTER

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THIRD SEMESTER

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<td>ITP 120</td>
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<td>HLT/PED</td>
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<tr>
<td>HUM</td>
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<td><strong>2</strong></td>
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</table>

PROGRAM INFO

Minimum credits: 65

Length: 4 semesters (2 years), if suggested full-time course sequence is followed.

Career opportunities: Graduates may enter the job market immediately or increase their earning potential by transferring to a four-year university to earn a bachelor’s in information technology.

Multimedia Artist or Animator: $78,230

Job growth: 6%

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

Continued on next page
INFORMATION SYSTEMS TECHNOLOGY – GAMING & MOBILE APPLICATIONS SPECIALIZATION

FOURTH SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
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<td>BUS 100 Introduction to Business</td>
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<td>BUS 236 Communication in Management</td>
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<tr>
<td>ITD 120 Design Concepts for Mobile Apps</td>
<td>4</td>
<td>0</td>
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<tr>
<td>ITP 214 Windows Mobile Development</td>
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<tr>
<td>ITP 265 Application of Modeling &amp; Simulation</td>
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1 Students having prior keyboarding experience may request testing out.

INFORMATION SYSTEMS TECHNOLOGY – SOFTWARE DEVELOPMENT SPECIALIZATION

**Award:** Associate of Applied Science

**Plan Code:** 299-01

**CIP Code:** 11.0101

This program focuses on designing, creating, and maintaining desktop software. Coursework includes analyzing problems, creating solutions, writing code, testing solutions/programs, project management, production aspects, and updating projects. Students will learn core problem-solving skills, known as the “six steps to program problem-solving,” and how to use integrated development environments in today’s market.

**Program Coordination:** Some credits earned in the CSCs for Mobile Application Development and Software Development fulfill course requirements of this degree.

**Program Outcomes:** Graduates will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, and certifications.
3. Apply analytical and problem-solving skills for computer system designs, planning, and support.
4. Design, code, test, debug, and document software needed for computer system implementation and maintenance.
5. Apply current IT industry standards, protocols, and techniques.
6. Use instructional applications and material which could lead to industry certifications.

**Industry Certifications:** Java Foundations; Java SE7 Programmer (1Z0-803); MTA – Database Fundamentals (98-364), Software Fundamentals (98-379); MOS- Word, Excel, PowerPoint, Access.

**Course Sequence**

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>FIRST SEMESTER</td>
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<tr>
<td>AST 114 Keyboarding for Information Processing$^1$</td>
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<tr>
<td>ENG 131 Technical Report Writing I</td>
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<td>ITE 120 Principles of Information Systems</td>
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<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
<td>0</td>
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<tr>
<td>ITP 120 Java Programming I</td>
<td>4</td>
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<td>SDV 100 College Success Skills</td>
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<td><strong>2</strong></td>
<td><strong>18</strong></td>
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</table>

1 Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
SECOND SEMESTER
ECO 120  Survey of Economics  3  0  3  3
BUS 100  Introduction to Business  3  0  3  3
ITP 220  Java Programming II  4  0  4  4
ITP 258  Systems Development Project  3  0  3  3
MTH 130  Fundamentals of Reasoning  (or approved sub)  3  0  3  3
Total  16  0  16  16

THIRD SEMESTER
ITP 136  C# Programming I  4  0  4  4
ITD 132  Structured Query Language  3  0  3  3
ITE 150  Desktop Database Software  4  0  4  4
ITP 246  Server Side Java Programming  4  0  4  4
BUS 204  Project Management  3  0  3  3
Total  18  0  18  18

FOURTH SEMESTER
BUS 236  Communications in Management  3  0  3  3
ITP 244  ASP.NET Server Side Programming  4  0  4  4
ITN 109  Internet and Network Foundations  3  0  3  3
ITP 170  Project Management (IT)  3  0  3  3
HUM  Humanities Elective  3  0  3  3
Total  16  0  16  16

*Students having prior keyboarding experience may request testing out.

MOBILE APPLICATION DEVELOPMENT

Award: Career Studies Certificate

Plan Code: 221-299-45  CIP Code: 11.0899

Program Coordination: 2 courses/7 credits (ITP 100, ITP 120 or ITP 136) count towards the A.A.S. degree in IST - Software Development. 3 courses/11 credits (ITP 100, ITP 120 or ITP 136, and ITD 120 or ITP 214) count towards the A.A.S. degree in IST - Gaming & Mobile Applications.

Program Outcomes: Graduates of this program will be able to:
1. Apply analytical and problem-solving skills for mobile system design, planning, and support.
2. Design, code, test, debug, and document software needed for mobile system implementation and maintenance.

Students will choose a pathway in either Java or C# programming:
- Java sequence: ITP 100, ITP 120, ITD 120, and ITP 226.
  Industry certifications: Java SE7 Programmer (1Z0-803), Android Application Development.
- C# sequence: ITP 100, ITP136, ITP 214, and ITP 236.
  Industry certification: C# Microsoft Technology Associate.

Course Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITP 100  Software Design</td>
<td>3 0 3 3</td>
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<tr>
<td>ITP 120/136 Java Programming I OR C# Programming I</td>
<td>4 0 4 4</td>
<td></td>
</tr>
<tr>
<td>ITD 120 Design Concepts for Mobile Apps OR</td>
<td>4 0 4 4</td>
<td></td>
</tr>
<tr>
<td>ITP 214 Windows Mobile Development</td>
<td>4 0 4 4</td>
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<tr>
<td>ITP 215 XML Web Services</td>
<td>4 0 4 4</td>
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</tr>
<tr>
<td>ITP 226/ Mobile Java Android Development OR</td>
<td>4 0 4 4</td>
<td></td>
</tr>
<tr>
<td>ITP 236 C# Programming II</td>
<td>4 0 4 4</td>
<td></td>
</tr>
</tbody>
</table>

Total 19 0 19 19

PROGRAM INFO
Minimum credits: 19
Length: 2 semesters
Career opportunities: Multimedia Artist or Animator: $78,230
Job growth: 6%
*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462
SOFTWARE DEVELOPMENT

Award: Career Studies Certificate

Plan Code: 221-299-06

CIP Code: 11.0101

This program focuses on designing, creating, and maintaining desktop software.

Program Coordination: Credits earned in this CSC may be counted towards the IST Software Development A.A.S. degree.

Program Outcomes: Graduates of this program will be able to:
1. Implement information technology skills required by software applications.
2. Apply methodologies to stay current in IT offerings, trends, & certifications.
3. Apply analytical & problem-solving skills for computer system designs, planning, & support.
4. Design, code, test, debug, & document software needed for computer system implementation & maintenance.
5. Apply current IT industry standards, protocols, & techniques.
6. Use instructional applications & material which could lead to industry certifications.


<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<td>ITP 100  Software Design</td>
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<td>ITP 120  Java Programming I</td>
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<td>ITP 220  Java Programming II</td>
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<tr>
<td>ITD 132  Structured Query Language</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>ITP 246  Java Server Side Programming</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

G3 Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
WEBSITE DESIGN

Award: Career Studies Certificate

Plan Code: 221-352-03  CIP Code: 11.0801

Program Outcomes: Graduates of this program will be able to:
1. Design, code, test, debug, & document software needed for computer system implementation & maintenance.
2. Use instructional applications & material which could lead to industry certifications.

Industry Certifications: CIW Site Development Associate; CIW Advanced HTML5; CSS3 Specialist.

Course Sequence
FIRST SEMESTER
ITD 110  Web Page Design I  3 0 3 3
ITP 112  Designing Web Page Graphics  3 0 3 3
MKT 281  Principles of Internet Marketing  3 0 3 3

Total  9 0 9 9

SECOND SEMESTER
ITD 115  Web Page Design & Site Management  3 0 3 3
ITD 210  Web Page Design II  3 0 3 3
ITD 198  Seminar and Project  1 0 1 1

Total  7 0 7 7

WEBSITE PROGRAMMING

Award: Career Studies Certificate

Plan Code: 221-352-04  CIP Code: 11.0801

Program Outcomes: Graduates of this program will be able to:
1. Design, code, test, debug, & document software needed for computer system implementation & maintenance.
2. Use instructional applications & material which could lead to industry certifications.

Industry Certifications: CIW Site Development Associate; CIW Database and CIW Javascript Specialist

Course Sequence
FIRST SEMESTER
ITD 110  Web Page Design I  3 0 3 3
ITP 100  Software Design  3 0 3 3
ITD 132  Structured Query Language  3 0 3 3

Total  9 0 9 9

SECOND SEMESTER
ITP 140  Client Side Scripting  3 0 3 3
ITP 225  Web Scripting Languages  3 0 3 3
ITD 198  Seminar and Project  1 0 1 1

Total  7 0 7 7
Criminal Justice & Public Safety

These programs prepare graduates to work in law enforcement, corrections, public safety, or in private security/investigations firms.

Administration of Justice – Law Enforcement Specialization (AAS) ................................................................. 124
Cybercrime Investigation (CERT) ............................................................................................................................ 126
Foundations of Criminal Justice (CERT) ........................................................................................................... 127
Law Enforcement (CERT) ................................................................................................................................... 128

DCC’s Cybercrime Investigation program has been recognized by the Department of Homeland Security and National Security Agency. DCC was designated as a National Center of Academic Excellence in Cyber Defense Two-Year Education (CAE2Y) in 2016, the first rural community college in Virginia to achieve this honor!
Administration of Justice (ADJ) programs are designed to prepare individuals for careers in public safety. The A.A.S. degree does not substitute for attendance at a basic police academy required by Virginia’s local and state law enforcement agencies. Students who plan to transfer DCC courses into a four-year program in criminal justice/administration of justice are strongly urged to consult with their faculty advisor and the counseling office for course selection. Transferability of ADJ coursework to four-year colleges or universities is contingent on the academic credit transfer policies of those institutions.

Admission Requirements: In addition to general college admission requirements, requirements for employment at criminal justice agencies may include: Excellent physical and mental health; Normal hearing and color vision. Eye functions must be normal (visual acuity must not be less than 20/40 in either eye without correction); Weight should be in proportion to height; Excellent moral character; No conviction of any crime involving moral turpitude or conviction of any felony; An excessive number of traffic citations would be cause to exclude an applicant from consideration by most agencies; U.S. citizenship.

NOTE: An extensive background investigation will be conducted by criminal justice agencies before hiring. Anyone who has been convicted of a felony or any offense involving moral turpitude or violence should consult with the faculty advisor.

Program Outcomes: Graduates will demonstrate knowledge of the following:
1. Various sources of crime data (e.g. FBI-based Uniform Crime Reporting system) and analytical skills necessary to evaluate strengths and weaknesses of crime data reporting;
2. Assessment skills applied to community-police programs and evaluative measures to be applied to the merits of police-sponsored community crime prevention efforts;
3. Functions of the different components of the criminal justice system—police, judiciary, corrections and protective services;
4. The role diversity plays in decision-making at all levels of the criminal justice system;
5. The global nature of crime, to include the impact of crime and the prosecution of criminal offenders operating in the U.S. and internationally to further a terrorist goal, commit cybercrime, or reap profits associated with criminal enterprises;
6. Stress reduction techniques, including a consistent physical fitness conditioning program;
7. The importance of volunteering one’s talents for the overall improvement of one’s community;
8. The need for uncompromising ethical and moral standards;
9. Exemplary written and oral communication skills;
10. Excellent information literacy skills.

Instructional delivery: Most courses may be taken online, e.g. ADJ 100 Survey of Criminal Justice, ADJ 130 Criminal Law, ADJ 145 Corrections & the Community, ADJ 215 Report Writing, ADJ 227 Constitutional Law, and ADJ 234 Terrorism and Counter-Terrorism, as well as other general education courses.

College Credit for Academy Training: After an ADJ student completes 35 or more required credits, 21 and 15 credits respectively will be awarded as follows:

**Virginia State Police Academy:**
3 credits - ADJ 100, Survey of Criminal Justice, 3 credits - ADJ 130, Criminal Law, 3 credits - ADJ 236, Criminal Investigation, 9 credits - ADJ coursework*, 3 credits - Wellness Elective **Total: 21 credits**

**Virginia Department of Criminal Justice Services Regional Academies:**
3 credits - ADJ 100, Survey of Criminal Justice, 3 credits - ADJ 130, Criminal Law, 3 credits - ADJ 236, Criminal Investigation, 3 credits - ADJ coursework*, 3 credits - Wellness Elective, **Total: 15 credits**

*e.g. ADJ 227 - Constitutional Law or ADJ 215 - Report Writing.

Continued on next page
## ADMINISTRATION OF JUSTICE – LAW ENFORCEMENT SPECIALIZATION

### FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<td>Survey of Criminal Justice</td>
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### SECOND SEMESTER

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<td>NAS 105</td>
<td>Natural Science Topics for Modern Society OR Other Approved Lab OR Math Course</td>
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<td>ENG 112</td>
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<td>Legal Evidence</td>
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### THIRD SEMESTER

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<tbody>
<tr>
<td>PSY 200</td>
<td>Principles of Psychology</td>
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<td>ADJ 133</td>
<td>Ethics and the Criminal Justice Professional</td>
<td>3</td>
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<td>SPA 101</td>
<td>Beginning Spanish I</td>
<td>4</td>
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<td>SOC 235</td>
<td>Juvenile Delinquency</td>
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<td>Terrorism and Counter-Terrorism</td>
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### FOURTH SEMESTER

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<tbody>
<tr>
<td>HUM 165/</td>
<td>Controversial Issues OR Principles of Public Speaking¹</td>
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<td>CST 100</td>
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<td>Abnormal Psychology</td>
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<td>SOC 236</td>
<td>Criminology</td>
<td>3</td>
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<tr>
<td>ADJ 215</td>
<td>Report Writing</td>
<td>3</td>
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<td>PED/HLT</td>
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</tr>
</tbody>
</table>

¹ Students may substitute CST 100 if required by the transfer school.

² BUS 147 (Intro to Business Information Systems) is recommended for students intending to transfer.

³ Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
This certificate is designed for current law enforcement and security employees to enhance their skills. Graduates of relevant law enforcement training programs may receive advanced standing credit for some requirements.

Program Outcomes: Graduates will demonstrate the ability to:
1. Investigate computer crimes and incidents and accurately analyze and report findings;
2. Prepare written computer forensics investigation reports that are admissible in court;
3. Describe network components, protocols, architectures, and the application of current communication and networking technologies;
4. Acquire, recover, document and analyze information contained within and created by computer systems, including different operating systems and networks, computer devices, and digital devices, including cellular telephones and digital cameras;
5. Identify the specifics of computer and network security exposures and vulnerabilities and the countermeasures available to prevent breaches and other system intrusions;
6. Help organizations increase awareness of security policies and procedures;
7. Collect, analyze and evaluate evidence data using industry-standard computer forensic software and hardware;
8. Collaborate with others to conduct a proper computer-forensics investigation;
9. Discuss and apply the rules of evidence and court procedures and apply the legal and ethical issues related to the acquisition and analysis of digital evidence.

Course Sequence

FIRST SEMESTER
- SDV 100 College Success Skills
  - Lecture: 1
- ENG 111 College Composition I
  - Lecture: 3
- PSY 200 Principles of Psychology
  - Lecture: 3
- ADJ 100 Survey of Criminal Justice
  - Lecture: 3
- ITE 116 Survey of Computer Software Applications
  - Lecture: 2

Total: 12

SECOND SEMESTER
- ADJ 130 Introduction to Criminal Law
  - Lecture: 3
- SOC 200 Principles of Sociology
  - Lecture: 3
- ITN 276 Computer Forensics I
  - Lecture: 3

Total: 9

THIRD SEMESTER (SUMMER)
- ADJ 161 Introduction to Computer Crime
  - Lecture: 3
- ITN 277 Computer Forensics II
  - Lecture: 3

Total: 6

FOURTH SEMESTER
- ADJ 227 Constitutional Law
  - Lecture: 3
- SOC 236 Criminology
  - Lecture: 3
- ITN 260 Network Security Basics
  - Lecture: 3

Total: 9
Award: Certificate

CIP Code: 43.0103

Purpose: This Career Studies Certificate provides an overview of foundational topics related to criminal justice

Program Outcomes: Graduates will demonstrate knowledge of the following:
1. Functions of the different components of the criminal justice system—police, judiciary, corrections and protective services;
2. The need for uncompromising ethical and moral standards;
3. Exemplary written communication skills;
4. Excellent information literacy skills.

Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Introduction to Criminal Law</td>
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<td>ADJ 100</td>
<td>Survey of Criminal Justice</td>
<td>3</td>
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<td>ADJ 133</td>
<td>Ethics and the Criminal Justice Professional</td>
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<td>Criminology</td>
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*Pending approval

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business

Contact: 434.797.8402 or 434.797.8462

Criminal Justice & Public Safety • 127
Award: Certificate

Plan Code: 463  CIP Code: 43.0103

This certificate is designed to meet the short-term training needs of existing law enforcement employees. Graduates of law enforcement training programs may receive advanced standing credit for some requirements.

Program Outcomes: Graduates will demonstrate knowledge of the following:
1. Various sources of crime data (e.g. FBI-based Uniform Crime Reporting system) and analytical skills necessary to evaluate strengths and weaknesses of crime data reporting;
2. Functions of the different components of the criminal justice system—police, judiciary, corrections and protective services;
3. The need for uncompromising ethical and moral standards;
4. Exemplary written and oral communication skills;
5. Excellent information literacy skills.

Course Sequence

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Lab</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>ENG 111</td>
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<td>ADJ 130</td>
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<td>SOC 200</td>
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<td>PSY 200</td>
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SECOND SEMESTER

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<td>ADJ 215</td>
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<td>ADJ 227</td>
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<td>SOC 236</td>
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<td>SOC215/268 Social Problems</td>
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<td>ADJ 133 Ethics and the Criminal Justice</td>
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</tbody>
</table>

PROGRAM INFO

Minimum credits: 34
Length: 2 semesters

Career opportunities:
- Corrections Officer: $49,300
- Patrol Officer: $65,400

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov
Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
DCC’s education programs span a wide range of age groups and careers. Graduates of the Associate in Applied Science and the Career Studies Certificate may seek immediate employment in daycare or elementary school settings as a teacher’s aide after graduation. Associate degree students may also choose to transfer to a four-year university to become a K-12 school teacher. Special scholarship funds are available to childcare providers who wish to further their education at DCC, thanks to a generous donation from Ben and Betty Davenport.
Award: Career Studies Certificate

Plan Code: 221-636-10

CIP Code: 19.0709

This certificate is the first step in a stackable path for Early Childhood Educators. The Advanced Career Studies Certificate in Early Childhood Development prepares students to work with children from birth to age 8 using developmentally practices. Coursework includes infant/toddler care and education, working with exceptional children, developing partnerships with families and the community, and administration of Early Childhood Programs. This certificate is primarily designed to prepare graduates for employment in child care centers as lead teachers or directors or to allow students to continue on the path towards the AAS degree in Early Childhood Education.

Scholarships are available for this program, including the Virginia Child Care Providers scholarship, the Project Pathfinders Scholarship.

Admission Requirements: In addition to regular college admission requirements, program entry requires a personal interview with the Early Childhood Education Department, as well as meeting the following criteria:

1. Excellent moral character is generally considered prerequisite for employment. Background investigations will be conducted by the college to confirm that students have not been convicted of a crime involving moral turpitude or any felony.
2. Upon program entrance, the student will be responsible for obtaining and paying for a criminal background check and show a negative TB test.
3. Students must possess sufficient physical strength, flexibility and dexterity to perform education and care routines for children.


Program Outcomes: Graduates will be able to:

1. Adhere to Virginia’s Standards for Licensed Child Day Centers in the planning and evaluation of classroom and learning environments to ensure the health, safety and nutrition of children.
2. Design and implement developmentally appropriate curriculum plans, to include learning activities and environments for children.
3. Engage in and support diverse family and community relationships to build enriching and effective partnerships for children.

Lecture Lab Hours Credits
Course Sequence
One Semester (when combined with ALL courses in the Early Childhood Development CSC)
CHD 166 Infant and Toddler Programs 3 0 3 3
CHD 210 Introduction to Exceptional Children 3 0 3 3
CHD 216 Early Childhood Programs, Schools and Social Change 3 0 3 3
CHD 270 Administration of Childcare Programs 3 0 3 3
Total 12 0 12 12

*Mean salaries nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Award: Career Studies Certificate

Plan Code: 221-636-04

CIP Code: 19.0709

This certificate is the first step in a stackable path for Early Childhood Educators. The Career Studies Certificate in Early Childhood Development prepares students for entry level work with children from birth to age 8 using developmentally practices. Coursework includes basic child development and theoretical perspectives, health and safety education, and guiding children’s behavior. This certificate is primarily designed to prepare graduates for employment in child care centers or family day homes as entry level providers or to allow students to continue on the path towards the Adv. CSC and/or AAS degree in Early Childhood Education.

Scholarships are available for this program, including the Virginia Child Care Providers scholarship, and the Project Pathfinders Scholarship.

Admission Requirements: In addition to regular college admission requirements, program entry requires a personal interview with the Early Childhood Education Department, as well as meeting the following criteria:

1. Excellent moral character is generally considered prerequisite for employment. Background investigations will be conducted to confirm that students have not been convicted of a crime involving moral turpitude or any felony.
2. Upon program entrance, the student will be responsible for obtaining and paying for a criminal background check and show a negative TB test.
3. Students must possess sufficient physical strength, flexibility and dexterity to perform education and care routines for children.


Program Outcomes: Graduates will be able to:

1. Adhere to Virginia’s Standards for Licensed Child Day Centers in the planning & evaluation of classroom & learning environments to ensure the health, safety & nutrition of children.
2. Design and implement developmentally appropriate curriculum plans, to include learning activities and environments for children.

### Program Info

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<tr>
<td>Length:</td>
<td>1 semester, if suggested full-time course sequence is followed</td>
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<tr>
<td>Career opportunities: Entry Level Child Care Center Provider:</td>
<td>$23,240</td>
</tr>
<tr>
<td>Job growth: 2% from 2018 to 2028</td>
<td></td>
</tr>
<tr>
<td>Entry Level Family Day Home Provider:</td>
<td>$23,240</td>
</tr>
<tr>
<td>Job growth: 2% from 2018 to 2028</td>
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</table>

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

### Course Sequence

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>CHD 120 Intro to Early Childhood Education</td>
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<tr>
<td>CHD 145 Teaching Art, Music &amp; Movement to Children</td>
<td>2</td>
<td>2</td>
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<tr>
<td>CHD 165 Observation &amp; Participation in Early Childhood/Primary Settings</td>
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<tr>
<td>CHD 205 Guiding the Behavior of Children</td>
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<tr>
<td>EDU 235 Health, Safety, &amp; Nutrition Education</td>
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<td><strong>16</strong></td>
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</tbody>
</table>

**Course sequence note:** Students completing this CSC to satisfy Head Start regulations must take CHD 167 (CDA Theories and Applications: Portfolio).

Admission Requirements: In addition to regular college admission requirements, program entry requires a personal interview with the Early Childhood Education Department, as well as meeting the following criteria:

1. Excellent moral character is generally considered prerequisite for employment. Background investigations will be conducted to confirm that students have not been convicted of a crime involving moral turpitude or any felony.
2. Upon program entrance, the student will be responsible for obtaining and paying for a criminal background check and show a negative TB test.
3. Students must possess sufficient physical strength, flexibility and dexterity to perform education and care routines for children.


Program Outcomes: Graduates will be able to:

1. Adhere to Virginia’s Standards for Licensed Child Day Centers in the planning & evaluation of classroom & learning environments to ensure the health, safety & nutrition of children.
2. Design and implement developmentally appropriate curriculum plans, to include learning activities and environments for children.

### Program Info

<table>
<thead>
<tr>
<th>Minimum credits:</th>
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</thead>
<tbody>
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<td>Length:</td>
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*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8402 or 434.797.8462

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<tr>
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<th>Credits</th>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CHD 120 Intro to Early Childhood Education</td>
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<td>3</td>
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<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CHD 165 Observation &amp; Participation in Early Childhood/Primary Settings</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>CHD 205 Guiding the Behavior of Children</td>
<td>3</td>
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<tr>
<td>EDU 235 Health, Safety, &amp; Nutrition Education</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>8</strong></td>
<td><strong>21</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Course sequence note:** Students completing this CSC to satisfy Head Start regulations must take CHD 167 (CDA Theories and Applications: Portfolio).

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Award: Associate of Applied Science

Plan Code: 636

CIP Code: 19.0709

This degree is the third step in a stackable path for Early Childhood Educators. This program prepares students to work with children from birth to age 8 using developmentally appropriate practices documented by Virginia Competencies for Early Childhood Professionals. Coursework includes child education, behavior management, methods of teaching children, general education, and electives. Instruction will include both theoretical concepts and practical applications needed to provide high-quality services for children. The degree is primarily designed to prepare graduates for immediate employment after completion of DCC studies or to enable a student to seamlessly transfer to a four-year bachelor’s degree program in Early Childhood Education and teacher licensure PK-3. Please see the program coordinator for a list of Virginia Public Institutions that accept this degree for licensure and their criteria.

Scholarships are available for this program, including the Virginia Child Care Providers scholarship, and the Project Pathfinders Scholarship.

Instructional Delivery: About 2/3 of program courses are offered online or as hybrid courses to accommodate working professionals.

Admission Requirements: In addition to regular college admission requirements, program entry requires a personal interview with the Early Childhood Education Department, as well as meeting the following criteria:
1. Excellent moral character is generally considered prerequisite for employment. Background investigations will be conducted by the college to confirm that students have not been convicted of a crime involving moral turpitude or any felony.
2. Upon program entrance, the student will be responsible for obtaining and paying for a criminal background check and show a negative TB test.
3. Students must possess sufficient physical strength, flexibility and dexterity to perform education and care routines for children.


Program Outcomes: Graduates will be able to:
1. Adhere to Virginia’s Standards for Licensed Child Day Centers in the planning and evaluation of classroom and learning environments to ensure the health, safety and nutrition of children.
2. Design and implement developmentally appropriate curriculum plans, to include learning activities and environments for children.
3. Engage in and support diverse family and community relationships to build enriching and effective partnerships for children.
4. Observe, document and assess progress to promote positive outcomes for all children.
5. Engage with peers and community partners in the early childhood profession through collaborative learning and informed advocacy for young children.

Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Program Info

Minimum credits: 62

Length: 2 years (4 semesters), if suggested full-time course sequence is followed

Career opportunities:
- Head Start Teacher Assistant: $26,970
  Job growth: 4% from 2018 to 2028
- Public School Teacher Assistant: $26,970
  Job growth: 4% from 2018 to 2028
- Preschool Teacher: $29,780
  Job growth: 7% from 2018 to 2028

Contact: 434.797.8402 or 434.797.8462
## Course Sequence

### FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<tr>
<td>CHD 166</td>
<td>Infant and Toddler Programs</td>
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<td>CHD 210</td>
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<td>Administration of Childcare Programs</td>
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### THIRD SEMESTER

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<td>Developmental Psychology</td>
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<td>Intro to Teaching As a Profession</td>
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*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
Science, Engineering, & Allied Health

These programs, which range in length from 10 weeks to two years, prepare graduates to fill health care or science-related jobs that continue to see high growth across the country. Different programs are designed for immediate employment after graduation, or transfer to a four-year college or university.

Pre-Allied Health Nurse Aide (CSC) ................................................................................................................135

Allied Health – Short-Term Programs:
Basic Dental Assisting (CSC) ..........................................................................................................................136
Emergency Medical Services (CSC) ...............................................................................................................137
Nurse Aide Extended Care (CSC) ...................................................................................................................137
Pharmacy Technician (CSC) ...........................................................................................................................138
Phlebotomy (CSC) ...........................................................................................................................................139

Allied Health – Associate Degree Programs:
Dental Hygiene (AAS) (*Awarded by Virginia Western Community College) ..................................................139
Health Science – Practical Nursing Specialization (AAS) ...............................................................................142
Medical Laboratory Technology (AAS) (*Awarded by J.Sargeant Reynolds) ..................................................144
Nursing (AAS) ..................................................................................................................................................146
Respiratory Therapy (AAS) (*Awarded by J.Sargeant Reynolds) ...................................................................150

College Transfer:
Engineering (AS) ................................................................. Engineering (AS) ................................................................. 153
Science (AAS) .............................................................................................. Science (AAS) .............................................................................................. 154
PRE-ALLIED HEALTH ADVANCED NURSE AIDE

Award: Career Studies Certificate

This program is designed to prepare students for employment as certified nurse aids who also possess foundational skills and coursework that allow for more training in other health care occupations such as registered nurse, practical nurse, dental hygiene or radiologic technology. Nurse aides, under supervision of a licensed nurse, help provide basic care and maintain a safe, clean environment for patients in long-term health care facilities or home health care.

Industry Certifications: The program prepares students to take the Virginia State Board of Nursing Certified Nurse Aide (CNA) test.

Program Outcomes: Graduates will demonstrate:
1. Knowledge and skills to become a certified nurse aide.
2. Ability to identify commonly used medical terminology.
3. Ability to describe how nutrition and diet therapy play a role in an individual's overall health.
4. Ability to describe the use of basic health care principles in a variety of situations.

Course Sequence

<table>
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<tr>
<th>Course</th>
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<td>NUR 98</td>
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PROGRAM INFO

Minimum credits: 29
Length: 2 semesters
Career opportunities:
Nurse Aide/Assistant: $29,580
Job growth: 17% from 2014 to 2024
*Mean salaries nationwide as of 2018. Source: BLS.gov
Division: Arts, Sciences, & Business
Contact: 434.797.8462 or 434.797.8402
BASIC DENTAL ASSISTING

Award: Career Studies Certificate

Plan Code: 221-120-02     CIP Code: 51.0601

This program prepares students for employment in dentists' offices performing a variety of tasks related to patient care.

Program Requirements: Students must earn grades of “C” or higher in all basic dental assisting courses to remain active in the program. Students must possess the physical strength and dexterity to perform necessary job duties.

Admission Requirements: In addition to general college admission requirements, students must meet the following:
1. Satisfactory completion of ENF 1 and/or ENF 2 (if a need for developmental English is indicated by VPT scores.) Students whose VPT scores indicate placement in ENF 3/ENG111 are not required to complete the ENF 3 developmental English course.
2. Satisfactory completion of MTE 1, 2, and 3 if a need for developmental math units is indicated by VPT scores.
3. Current CPR certification is required.

Industry Certifications: Graduates are eligible to take the Dental Assisting National Board exams for Infection Control & Radiation Safety certification. However, students are not required to seek certification.

Program Coordination: Dental assisting courses do not transfer into any of DCC's other programs. However, students who plan on applying to DCC’s dental hygiene program frequently elect to complete the dental assisting program first. While completion of the dental assisting program has no direct effect on a student’s chances of being accepted into dental hygiene, students who have completed dental assisting typically have more knowledge and experience in the dental field. Thus, former dental assisting students may be seen as more knowledgeable and experienced candidates when applying.

Program Outcomes: Graduates will be able to:
4. Assist with the delivery of dental care as an integral team member.
5. Provide basic and expanded function skills with a variety of dental materials.
6. Expose, process, and mount dental radiographs including safety and digital applications.
7. Meet industry standards for asepsis, disinfection and sterilization to ensure a safe working environment.
8. Show communication skills demonstrating knowledge of dental ethics and jurisprudence.
9. Use clinical externships to integrate classroom and laboratory skills in an office setting.
10. Perform basic office procedures to manage the business operation of a dental practice.
11. Have the opportunity to pass the Dental Assisting National Board in Infection Control and Radiation Safety for graduates who choose to take the boards.

Course Sequence

<table>
<thead>
<tr>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<th>Credits</th>
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<td>FALL SEMESTER</td>
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<tr>
<td>DNA 100 Intro to Oral Health Professions</td>
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<td>DNA 109 Practical Infection Control</td>
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<td>DNA 110 Dental Materials</td>
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<td>SPRING SEMESTER</td>
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<tr>
<td>DNA 103 Intro to Oral Health</td>
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<tr>
<td>DNA 113 Chairside Assisting I</td>
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<td>DNA 134 Dental Radiology &amp; Practicum</td>
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Minimum credits: 22
Length: 3 semesters part-time, including a summer internship
Career opportunities: Dental assistant: $39,770
Job growth: 18% from 2014-2024
*Mean salaries nationwide as of 2018. Source: BLS.gov
Division: Arts, Sciences, & Business
Contact: 434.797.8402 or 434.797.8462
EMERGENCY MEDICAL SERVICES

Award: Career Studies Certificate

Plan Code: 221-146-06  CIP Code: 51.0904

Industry Certification: Graduates may sit for the Emergency Medical Technician exam for state (Virginia) certification.

Program Outcomes: Graduates will be able to:
1. Be familiar with Emergency Medical Care, the well-being of the EMT-B, medico-legal and ethical issues, the human body, vital signs & patient history, and lifting and moving patients.
2. Know the provisions for initial care for an illness or injury until definitive medical treatment can be accessed, which may include life-saving techniques.
3. Recognize cardiac arrest and provide basic life support.
4. Describe unique needs for assessing a patient.

Course Sequence

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<th>Course Sequence</th>
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<td>EMS 112 Emergency Medical Technician - Basic I</td>
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<td>EMS 113 Emergency Medical Technician - Basic II</td>
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<td>EMS 120 Emergency Medical Technician - Basic Clinical</td>
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PROGRAM INFO

Minimum credits: 9
Length: 2 semesters
Career opportunities:
Emergency Medical Technician: $37,760
Job growth: 24% from 2014 to 2024
Mean salaries & job growth nationwide as of 2018. Source: BLS.gov
Division: Workforce Services
Contact: 434.797.6437

NURSE AIDE EXTENDED CARE

Award: Career Studies Certificate

Plan Code: 221-157-08  CIP Code: 51.3901

Nurse Aides, under supervision of a licensed nurse, help provide basic care and maintain a safe, clean environment for patients in long-term health care facilities or home health care.

Industry Certifications: The program prepare students to take the Virginia State Board of Nursing Certified Nurse Aide (CNA) test.

Program Outcomes: Graduates will demonstrate:
1. Knowledge and skills to become a certified nurse aide.
2. And identify commonly used medical terminology.
3. Knowledge and skills to become certified to perform first aid and CPR.
4. Ability to describe how nutrition and diet therapy play a role in an individual's overall health.
5. Ability to describe the use of basic health care principles in a variety of situations.

Course Sequence

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<td>NUR 25 Nursing Assistant</td>
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<td>NUR 27 Nurse Aide</td>
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<td>NUR 98 Seminar &amp; Project</td>
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<td>HLT 105 Cardiopulmonary Resuscitation</td>
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<td>HLT 106 First Aid &amp; Safety</td>
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**PHARMACY TECHNICIAN**

**Award:** Career Studies Certificate

**Plan Code:** 221-190-08  **CIP Code:** 51.0999

Pharmacy Technicians assist and support licensed pharmacists to order, stock, package, prepare, and dispense medications to patients.

This program is academically rigorous, with more applicants than available seats in the program. Therefore, admission is on a **selective basis**, not first-come, first-served, based upon the student's academic background as well as the timely and successful completion of Developmental Studies requirements. Approximately one-half of the class will be selected by August of each year from applicants meeting the second admissions requirement before January 1 and interviewed during February or March. The remaining spots in the class will be filled during June from those applicants meeting the second requirement before May 16.

**Admission Requirements:** In addition to the general college admission requirements entry into this program requires:

- A drug test (6 panel) screening and background check must be obtained prior to the HLT 290 Clinical Practice/Internship class.
- A physician's report of good physical and mental health. (The required health certificate form will be provided by DCC and may be completed by a physician of the student's choice.)

**Re-admission Requirements:** Students wishing to be re-admitted to the program will follow the same procedures outlined above, with additional requirements regarding repetition of previous coursework that may be obtained from the Workforce Services Office.

**Program Outcomes:** Graduates will be able to:

1. Act ethically and maintain the confidentiality of patient records;
2. Demonstrate knowledge and skills of the sciences as applied to pharmaceutical principles;
3. Perform mathematical calculations essential to the duties of a pharmacy technician;
4. Receive and screen prescriptions and medication orders for completeness, accuracy, and authenticity;
5. Assist pharmacists in preparing, storing, and distributing medication products requiring special handling and documentation;
6. Prepare medications requiring compounding for sterile and non-sterile products and chemotherapy/hazardous products; and
7. Pass either state or national certification exams on the first attempt.

**Program Requirements:** To receive the Pharmacy Technician Career Studies Certificate, you must complete a minimum of 25 credits with a grade point average of 2.00 or better.

<table>
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<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
<td>FIRST SEMESTER</td>
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<tr>
<td>MTH 133 Math for Health Professions</td>
<td>3</td>
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<td>HLT 143 Medical Terminology</td>
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<td>HLT 250 General Pharmacology</td>
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<td>HLT 261/263 Basic Pharmacy I with Lab</td>
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<td>CST 100 Principles of Public Speaking</td>
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<td>AST 114/115 Keyboarding for Information Processing with Lab</td>
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PHLEBOTOMY

Award: Career Studies Certificate

Plan Code: 221-151-02  CIP Code: 51.1004

NOTE: Students who have a felony conviction or assault conviction will not be allowed into clinical facilities. They are thus advised to choose a non-allied health field.

The art of drawing blood will be taught through intensive supervised hands-on practice using artificial arms and volunteers. Students will collect venous and capillary specimens. The skill level of the student will be assessed using competency standards utilized by certification agencies such as CLSI and ASCP. Clinical hours (MDL 106) will begin ONLY after the student has acquired the appropriate skill level and has satisfactorily passed the didactic portion of the program (MDL 105). To be eligible to sit for national certification exams, the student must complete 100-150 hours of clinical time with 100-150 successful collections. The CSC denotes successful completion of the program and does not guarantee that the student will pass the national exams.

Program Outcomes: Graduates will be able to:
1. Perform duties safely and effectively within their scope of practice as a phlebotomy technician.
2. Perform within the ethical and legal boundaries of the phlebotomy technician’s scope of practice.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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DENTAL HYGIENE*

Award: Associate of Applied Science

Plan Code: 221-636-04  CIP Code: 51.0602

This program prepares graduates to work as primary preventive oral health professionals licensed to practice dental hygiene. Dental hygienists clean teeth, examine patients for signs of oral diseases such as gingivitis, and provide other preventive dental care. They also educate patients on ways to improve and maintain good oral health. Upon successful completion of the program, graduates will be eligible to take national, regional, and state board examinations leading to licensure as a registered dental hygienist (RDH).

The program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the U.S. Department of Education.

(*Awarded by Virginia Western Community College)
Admission Requirements: In addition to general college admission requirements, applicants must complete the prerequisites listed below with a grade of “C” or higher by the end of the spring semester prior to beginning the program:

1. One unit of high school or college biology
2. One unit of high school or college chemistry
3. Completion of BIO 141-142, Anatomy and Physiology I-II (Must be completed before applying to program)
4. Completion of Algebra I or MTE 1-5 (Must be completed by end of spring semester prior to fall admission.)
5. Completion of SDV 101, Orientation to Health Professions.

The applicant’s high school or college (if applicable) cumulative grade point average (GPA) must be at least 2.75. College GPA is based on at least 12 credit hours in a 12-month time frame. The GPA is determined at the end of the fall semester prior to admission. Priority consideration will be given to applicants with a cumulative high school and/or college grade point average of 3.0 or above. All qualified applicants must take the TEAS Test.

Note: Individuals with a felony or misdemeanor conviction may not be allowed to take the licensing exam. This decision is made by the Virginia Board of Dentistry. For questions regarding this issue, call the VBD at 804.367.4538.

Clinical agencies may require that students have periodic background checks and drug screenings completed at the student’s expense before beginning enrichment rotations. VWCC requires a clear background and drug test prior to admission.

Admission Procedures: Admission to the VWCC-DCC joint venture distance program site in Danville is offered to qualified applicants on a biennial basis during odd-numbered years. Deadline for submitting complete application materials is February 15 for the upcoming academic year. If the number of qualified applicants falls below the maximum enrollment, the application deadline may be extended. Applicants should be aware that meeting the curriculum admission standards does not guarantee program admission. Applicants will be notified in writing of the action taken by the Dental Hygiene Admissions Committee in May.

Students interested in this program should consult the VWCC catalog for additional information on admissions, VWCC policy on Infectious Disease Status, Essential Dental Hygiene Functions, Clinical Environment, Student Responsibilities, Student Retention and Readmission Policy, which can be accessed at www.virginiawestern.edu/academics/health/dental.

Retention Policy: Satisfactory progress is demonstrated by achieving a grade of C or better in required Dental Hygiene and Natural Science courses. Students must satisfactorily complete BIO 150 with a grade of C or above before progressing to the second year of the program. Because curricular components build upon each other over the five semesters, students must complete required Dental Hygiene courses in sequence.

Program Outcomes (from VWCC): Students will demonstrate the following:

1. A thorough understanding of infection control.
2. Ability to gather the appropriate medical history information from clients.
3. Ability to use dental hygiene skills to provide patient care to treat complex dental issues.

Note: Degree is awarded by Virginia Western Community College (VWCC). Courses are held at DCC.

Course Sequence

PRIOR TO FIRST YEAR:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<th>Credits</th>
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<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
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<tr>
<td>BIO 142</td>
<td>Human Anatomy and Physiology II</td>
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<td>SDV 101</td>
<td>Orientation to Health Professions</td>
<td>2</td>
<td>0</td>
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</tbody>
</table>

NOTE: Support courses (non-DNH courses) may be taken prior to entry. BIO 141, BIO 142, and BIO 205/BIO 150 must be repeated if they were completed more than five years prior to the date of admission into the program.
DENTAL HYGIENE

FALL SEMESTER I
DNH 111  Oral Anatomy  2 0 2 2
DNH 115  Histology/Head and Neck Anatomy  3 0 3 3
DNH 120  Management of Emergencies  2 0 2 2
DNH 130  Oral Radiography for the Dental Hygienist  2 3 5 3
DNH 141  Dental Hygiene I  3 6 9 5
Total  12 9 21 15

SPRING SEMESTER I
DNH 142* Dental Hygiene II  2 9 11 5
DNH 145* General and Oral Pathology  2 0 2 2
DNH 146  Periodontics for the Dental Hygienist  2 0 2 2
DNH 216  Pharmacology  2 0 2 2
BIO 105  Introductory Microbiology  3 3 6 4
Total  11 12 23 15

SUMMER SEMESTER
DNH 150  Nutrition  2 0 2 2
DNH 143  Dental Hygiene III  2 6 8 3
DNH 235* Management of Dental Pain and Anxiety  1 2 3 2
ENG 111  College Composition  3 0 3 3
Total  8 8 16 10

FALL SEMESTER II
DNH 214  Practical Materials for Dental Hygiene  1 2 3 2
DNH 226  Public Health Dental Hygiene I  2 0 2 2
DNH 244  Dental Hygiene IV  1 12 13 5
PSY 230* Developmental Psychology  3 0 3 3
Total  7 14 21 12

SPRING SEMESTER II
DNH 227* Public Health Dental Hygiene II  0 3 3 1
DNH 230  Office Practice and Ethics  1 0 1 1
DNH 245* Dental Hygiene V  1 12 13 5
PHI 226  Social Ethics  3 0 3 3
Total  5 15 20 10

1 SDV 101 must be taken through VWCC before admittance to the program.

2 Health and Wellness are emphasized throughout the Dental Hygiene Program, but specifically in DNH 150 Nutrition.

3 DCC students should complete PHI 226 for this requirement. PHI 220 may be substituted for this course.

*These courses have a requisite. Requisites for all courses are listed in the course descriptions section. BIO 150 may be replaced by BIO 205.
HEALTH SCIENCE – PRACTICAL NURSING SPECIALIZATION

Award: Associate of Applied Science

Plan Code: 195-01   CIP Code: 51.0999

This degree is for students who wish to develop professionally in the areas of health care education, community health, or more advanced nursing training and supervision. DCC's program requires students to develop a firmer foundation in positive practices, anatomy and physiology, and applied mathematics than is required in typical practical nursing programs. Upon completion, graduates are eligible to apply to take the National Council Licensure Examination for Practical Nursing (NCLEX-PN).

Admission Requirements: DCC’s practical nursing program is academically rigorous, with more applicants than available seats. Admission is on a selective (not first-come, first-served) basis, focusing on the student’s past academic performance and results of the entrance exam.

Required for full admission:
1. High School diploma or GED, or homeschool equivalency.
2. Minimum GPA of 2.0
3. Non-developmental placement in English (writing and reading) and demonstrated proficiency in mathematics at MTE 1-3 or its equivalent.
4. Successful completion of the Nursing Entrance exam with minimum overall score of 55%.
5. Current C.P.R. certification at the American Heart Association BLS provider level.
6. Priority consideration will be given to students who have completed a sequence of preparatory college-level courses with grades of B or better in 3 attempts or less.
7. ENG 111 successfully completed with a grade of C or better.
8. NUR 135 successfully completed with a grade of C or better.
9. BIO 141 and BIO 142 completed with a grade of C or better. (Completion must be within 10 years.)
10. If accepted into the program, the student will be responsible for obtaining and paying for a physical exam, malpractice insurance and a criminal background check.

Note: Certain criminal convictions may prevent licensure as a nurse in Virginia and may also prohibit employment in certain health care settings. Students convicted of any felony or any misdemeanor involving moral turpitude/barrier crimes do not qualify for the DCC Nursing programs. Clinical facilities will not allow students to complete clinical hours, meaning that students will not be able to meet the Virginia Board of Nursing requirements, nor meet the credit requirement for graduation. Any student who has committed illegal offenses other than minor traffic violations should discuss with the program head.

Readmission Requirements: Students seeking readmission to the program will follow the same procedures and submit a readmission application. Once a student is readmitted, there are additional requirements regarding repetition of previous coursework, which may be obtained from the Nursing Department following readmission.

Program Outcomes: Graduates will be able to:
1. Assist in assessing the client’s physical and mental health.
2. Contribute to the development and implementation of the health care plan.
3. Record and report the nursing care rendered and the client’s response to care.
4. Communicate with patients, families, and other members of the health care team.
5. Identify legal-ethical issues, and self-limitations in the provision of patient care.
6. Serve as contributing members in the community.
7. Engage in additional educational opportunities that will enhance growth.

Program Info

Minimum credits: 65

Length: 4 semesters (2 years) once accepted into the program. The Practical Nursing program is full-time.

Career opportunities: Licensed Practical Nurses are in high demand across the U.S. LPNs are typically employed in long-term care facilities, assisted living facilities, adult daycare, medical offices, hospice, and private-duty nursing.

LPN salary: $47,050

Job growth: 12% from 2016 through 2026

*Mean salaries & job growth nationwide as of 2018. Source: BLS.gov

Division: Arts, Sciences, & Business

Contact: 434.797.8512

Continued on next page
**Program Requirements:** In order to advance to the next semester, students must earn a grade of “C” or better in all course work. Students must also demonstrate satisfactory attendance and performance in nursing clinical areas.

<table>
<thead>
<tr>
<th>Course Sequence</th>
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<th>Hours in Class</th>
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<td><strong>PRIOR TO FIRST SEMESTER</strong></td>
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<td>BIO 141 Human Anatomy &amp; Physiology I</td>
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<td>PNE 174 Applied Pharmacology</td>
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MEDICAL LABORATORY TECHNOLOGY
(*Awarded by Virginia Western Community College)

Award: Associate of Applied Science

Plan Code: 151       CIP Code: 51.1004

Note: This degree is awarded by J. Sargeant Reynolds Community College. Courses are held at DCC.

Admission Requirements:

• Admission to the MDL program is competitive and only a limited number of students will be accepted.
• A criminal background check, drug screen, and documentation of immunizations are required prior to placement for clinical rotations.
• Students must meet all Essential Skills Requirements.
• Applicants must have completed designated prerequisites included in the CSC to be eligible for admission into the MDL program and courses. Prerequisite courses are listed in the program student handbook.
• Completion of the Pre-Medical Laboratory Technology CSC does not guarantee admission to the AAS degree program. Transfer students should declare the Pre-Medical Laboratory Technology CSC as their major.
• Applicants must complete and submit an MDL application portfolio to the program director for consideration. (See the program application packet for more detail.)
• Fully qualified students will be ranked according to GPA, prior degrees achieved, and a completed application packet. (See the program application packet for full explanation.)
• A minimum GPA of 2.5 is required for consideration.
• Official transcripts from all previously attended colleges must be submitted to Central Admissions and Records.
• Advanced placement opportunities are based on evaluation of transcripts and clinical work experience, and must be discussed with the program head.

Application Deadlines:
• Fall Start: May 15 with notification in mid-June
• Spring Start: October 1 with notification in early November

Industry Credentials: Graduates are eligible to sit for the American Society for Clinical Pathology Board of Certification Exam.

Program Notes: Students must be accepted to this program to enroll in MDL major/clinical courses (MDL 110 and higher).

• Graduates will be eligible to take the Medical Laboratory Technology examinations for national certification. The national certification exam is not a requirement for graduation; however, it is strongly recommended and may be required for employment.
• Graduates that successfully complete the national certification exam are eligible to pursue a bachelor’s degree in Clinical Laboratory Science with either Virginia Commonwealth University or Old Dominion University.
• Students are responsible for covering the cost of medical care that they may require while in the clinical setting.
• The MDL courses may be taken for retraining by certified technologists who have been out of the field for a period of time.

Program Outcomes: The educational experiences in the Medical Laboratory Technology program are designed to ensure that students are well prepared to enter the profession of medical laboratory technology and continue to learn throughout their professional career. At completion of the program, graduates will be able to

1. Exhibit patient confidentiality within HIPAA parameters;
2. Demonstrate consistent safe practice within industry-level safety standards;
3. Demonstrate job entry-level precision and accuracy in performing procedures;
4. Formulate accurate reports within industry-level reporting parameters;
5. Analyze and record test and quality control data within industry-level accuracy standards;
6. Distinguish reportable vs. non-reportable test results using established industry criteria;
7. Troubleshoot non-reportable test results;
8. Discuss laboratory testing in terms of theory, technique, quality control, and interpretation; and
9. Perform routine testing of adult, infant, and geriatric patient samples in specified rotations.

Continued on next page
| Course Sequence | FIRST SEMESTER | | | | |
| | Lecture Hours | Lab Hours | Hours in Class | Credits |
| SDV 100* | 1 | 0 | 1 | 1 |
| MTH 155/161 | 3 | 0 | 3 | 3 |
| CHM 101*/111* | 3 | 3 | 6 | 4 |
| BIO 101*/141 | 3 | 3 | 6 | 4 |
| ENG 111* | 3 | 0 | 3 | 3 |
| MDL 100 | 1 | 3 | 4 | 2 |
| **Total** | **14** | **9** | **23** | **17** |
| | | | | |
| | SECOND SEMESTER | | | | |
| ITE 115* | 3 | 0 | 3 | 3 |
| Social/Behavioral Science Elective | 3 | 0 | 3 | 3 |
| MDL 125* | 2 | 3 | 5 | 3 |
| MDL 251* | 2 | 4 | 6 | 3 |
| BIO 102*/142 | 3 | 3 | 6 | 4 |
| Personal Wellness Elective | 0-1 | 0-2 | 1-3 | 1 |
| **Total** | **13-14** | **10-12** | **24-26** | **17** |
| | | | | |
| | THIRD SEMESTER | | | | |
| MDL 190* | 0 | 8 | 8 | 2 |
| MDL 210 | 2 | 3 | 5 | 3 |
| Immunochemistry and Serology | 3 | 0 | 3 | 3 |
| MDL 110 | 2 | 3 | 5 | 3 |
| **Total** | **7** | **14** | **21** | **11** |
| | | | | |
| | FOURTH SEMESTER | | | | |
| MDL 216* | 2 | 3 | 5 | 3 |
| MDL 225* | 2 | 3 | 5 | 3 |
| MDL 252* | 2 | 3 | 5 | 3 |
| MDL 262* | 3 | 3 | 6 | 4 |
| **Total** | **9** | **12** | **21** | **13** |
| | | | | |
| | FIFTH SEMESTER | | | | |
| MDL 281* | 1 | 0 | 1 | 1 |
| MDL 290*/0.9 | 0 | 8 | 8 | 2 |
| MDL 290*/0.9 | 0 | 8 | 8 | 2 |
| MDL 290*/0.9 | 0 | 8 | 8 | 2 |
| MDL 290*/0.9 | 0 | 8 | 8 | 2 |
| **Total** | **1** | **32** | **33** | **9** |

*TThis course is included in the Pre-Medical Laboratory Technology Career Studies Certificate.
|MTH 155 meets the graduation requirement for the A.A.S. degree in Medical Laboratory Technology. Students planning to pursue a four-year degree should take MTH 161.
|CHM 101 meets the graduation requirement for the A.A.S. degree in Medical Laboratory Technology. Students planning to pursue a four-year degree should take CHM 111.
|A list of approved general education electives (humanities/fine arts, social/behavioral science, mathematics, science and personal wellness) is provided in the General Education section of the J. Sargeant Reynolds catalog under Curriculum Planning and Design.
|This course is offered only in the spring term.
|For actual student contact laboratory hours per week for MDL 190 and MDL 290 courses, please refer to the course descriptions.
|MDL 210 is a prerequisite or co-requisite for MDL 216.
|This course is offered only in the fall term.
|CHM 101 or CHM 111 is a prerequisite or co-requisite for MDL 262.
|The final semester consists of clinical rotations with area hospitals or clinics. Medical Laboratory Technology Application packet: reynolds.edu/onlinecatalog/documents/MDL-Application-Packet.pdf

*Science, Engineering, & Applied Health • 145
NURSING

Award: Associate of Applied Science

Plan Code: 156    CIP Code: 51.3801

The DCC Nursing program does not accept credits for nursing courses from colleges outside the VCCS.

Admission Requirements: DCC's nursing program is academically rigorous, with more applicants than available seats. Admission is on a selective (not first-come, first-served) basis, focusing on the student's past academic performance and results of the entrance exam.

Requirements for full admission:
1. High school diploma, GED, or home school equivalency
2. Students must have a minimum prerequisite curricular GPA of 2.5. If a student has repeated one or more of the prerequisite curricular courses, only the latest grade will be used in the prerequisite curricular GPA calculation.
3. Demonstrated proficiency in mathematics at MTE 1-5 or its equivalence
4. Minimum nursing entrance test score at 45th national percentile (a minimum overall score of 65.5%)
5. Successful completion of SDV 100 or 101
6. ENG 111 successfully completed with a grade of C or better
7. PSY 230 successfully completed with a grade of C or better
8. NUR 135 successfully completed with a grade of C or better
9. BIO 141 successfully completed with a grade of C or better. It is strongly recommended that BIO 142 and BIO 150 be completed prior to beginning the nursing program.
10. Current C.P.R. certification at the American Heart Association BLS provider level
11. Priority consideration will be given to students who have completed a sequence of preparatory college-level courses with a grade of B or better in three (3) attempts or less.
12. If accepted into the program, the student will be responsible for obtaining and paying for a physical exam, malpractice insurance, and a criminal background check.

*Note: Certain criminal convictions may prevent licensure as a nurse in Virginia and may prohibit employment in certain health care settings. **Students convicted of any felony or any misdemeanor involving moral turpitude/barrier crimes do not qualify for DCC Nursing programs.** Clinical facilities will not allow such students to complete clinical hours, meaning that students will not be able to meet Virginia Board of Nursing requirements, nor meet the credit requirement for graduation. Any student who has committed illegal offenses other than minor traffic violations should discuss with the program head.

Readmission Process: Students seeking readmission will follow the same procedures and submit a readmission application. Contact Cathy Barrett, Program Coordinator for Nursing, at 434.797.8512 or 8512.

Program Outcomes Graduates of this program will be able to:
1. Provide patient-centered care promoting therapeutic relationships, caring behaviors, and self-determination across the lifespan for diverse populations.
2. Practice safe nursing care that minimizes risk of harm across systems and client populations.
3. Demonstrate nursing judgment through the use of clinical reasoning, the nursing process, and evidence-based practice in the provision of safe, quality care.
4. Practice professional behaviors that encompass the legal/ethical framework while incorporating self-reflection, leadership and a commitment to recognize the value of life-long learning.

Continued on next page
5. Manage client care through performance improvement processes, information technology, and fiscal responsibility to meet client needs and support organizational outcomes.
6. Demonstrate principles of collaborative practice within the nursing and interdisciplinary teams fostering mutual respect and shared decision-making to achieve stated outcomes of care.

Program Requirements: Students must complete 66 credits with a 2.0 GPA or better and must pass all courses with at least a C. Attendance and satisfactory performance in clinical portions of each class are mandatory.

<table>
<thead>
<tr>
<th>Lecture Hours</th>
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<th>Credits</th>
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<td><strong>Course Sequence</strong></td>
<td><strong>PRIOR TO FIRST YEAR</strong></td>
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<tr>
<td>BIO 141 Human Anatomy &amp; Physiology I</td>
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<td>ENG 111 College Composition I</td>
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<tr>
<td>PSY 230 Developmental Psychology</td>
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<td>SDV 100/101 College Success Skills</td>
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<td>NSG 100 Introduction to Nursing Concepts</td>
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<td>3</td>
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<td>NSG 106 Competencies for Nursing Practice</td>
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<td>NSG 130 Professional Concepts</td>
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<td>1</td>
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<td>NSG 200 Health Promotion &amp; Assessment</td>
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<tr>
<td>BIO 150 Introductory Microbiology</td>
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<td>NSG 152 Health Care Participant</td>
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<td>NSG 170 Health/Illness Concepts</td>
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<td><strong>FOURTH SEMESTER (SPRING)</strong></td>
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</table>

1. NAS 161 and BIO 231 are approved substitutes for BIO 141.
2. NAS 162 and BIO 232 are approved substitutes for BIO 142.
3. BIO 205 is an approved substitute for BIO 150.

Advanced Placement Option - LPN to ADN (RN)
The advanced placement option for LPN to ADN (RN) is the same curriculum as the traditional ADN (RN) program. Advanced standing is granted for the LPN license. Students will complete 66 credits total.

This option begins in the spring semester and ends the following year in May. Students will want to make careful arrangements for work and other responsibilities in order to devote the appropriate attention to learning complex material.

Advanced Placement – Licensed Practical Nurses who meet the admission requirements may be eligible for advanced placement. To be considered for advanced placement, an LPN must meet the following criteria listed below:

1. A graduate from a Board of Nursing approved Practical Nursing School.
NURSING

2. Candidate must have passed the NCLEX-PN licensing exam and hold a current unencumbered Virginia license to practice as a Practical Nurse, and maintain licensure throughout the duration of the program.

3. LPNs must successfully complete all ADN (RN) pre-requisite courses with a minimum GPA of 2.5 to be eligible for admission. Students must also have a cumulative GPA of 2.0 or higher for all college level course work. Failure to maintain the curricular GPA in the pre-requisite courses and a 2.0 cumulative GPA will void any program application and/or program acceptance.

4. LPNs must take the Kaplan entrance exam for Nursing and obtain a minimum overall score of 65.5% overall (45th national percentile). Scores are good for 3 years and students must provide a copy of their score with nursing application.

There are a limited number of seats available and admission to the program is not guaranteed.

Pre-requisite Courses

The following courses must be successfully completed with a grade of "C" or higher before you enter the ADN program:

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
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<tbody>
<tr>
<td>ENG 111 College Composition I</td>
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<td>SDV 100/101 College Success Skills</td>
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<tr>
<td>NUR 135 Drug Dosage Calculations</td>
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<tr>
<td>BIO 142 Human Anatomy and Physiology II</td>
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<td><strong>6</strong></td>
<td><strong>21</strong></td>
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</table>

LPNs in good standing will receive advanced standing for the courses in the first two semesters of the registered nursing sequence (NSG 100, NSG 106, NSG 130, NSG 152, and NSG 170) upon successful completion of the "bridge" spring semester and maintenance of an unencumbered license to practice as an LPN. Additionally, the student will be awarded credit for 150 clinical hours from his/her LPN program. The student will graduate with the same number of credits as the traditional student.

Transition Sequence

Once the student has successfully completed the pre-requisite courses, the student may apply to the Advanced Placement Option-LPN to ADN (RN) program.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
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<tr>
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<td>NSG 200 Health Promotion &amp; Assessment</td>
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<td>NSG 115 Healthcare Concepts for Transition</td>
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<td><strong>9</strong></td>
<td><strong>17</strong></td>
<td><strong>11</strong></td>
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</table>

*Students are strongly encouraged to take BIO 150 prior to the spring semester you enter the program.

Remainder of ADN program

After successfully completing the above courses, the student will join the existing traditional students in the last two semesters of the nursing program. These courses include:

<table>
<thead>
<tr>
<th>Course Sequence</th>
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<th>Lab Hours</th>
<th>Hours in Class</th>
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<tr>
<td>SOC 200* Principles of Sociology</td>
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<td>NSG 210 Health Care Concepts I</td>
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<td>NSG 211 Health Care Concepts II</td>
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<tr>
<td><strong>Total</strong></td>
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NURSING

SPRING SEMESTER

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<th>Credits</th>
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<td>NSG 230</td>
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<td>NSG 252</td>
<td>Complex Health Care Concepts</td>
<td>4</td>
</tr>
<tr>
<td>NSG 270</td>
<td>Nursing Capstone</td>
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</tr>
<tr>
<td>HUM*</td>
<td>Humanities Elective</td>
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</tbody>
</table>

Total: 9 12 21 13

*SOC 200 and Humanities elective may be taken prior to entry in the nursing program.
Degree is awarded by J. Sargeant Reynolds Community College. Approximately 21 credits in specified DCC courses must be completed prior to acceptance into the program. After a student is accepted, core courses in RTH are offered in Danville via distance learning, while clinical experiences are coordinated through area hospitals.

Functional Skills Requirements: Students must possess the following functional skills:

1. Sufficient eyesight, including color vision, to observe patients, perform & visualize patient assessments, manipulate equipment, & visually read patient records, graphs, and test results.
2. Sufficient hearing to communicate with patients & members of the health care delivery team, monitor patients using electronic equipment, & hear necessary sounds during operation of equipment.
3. Satisfactory speaking, reading, & writing skills to effectively communicate in English in a timely manner.
4. Sufficient gross & fine motor coordination to exhibit excellent eye-hand coordination and dexterity to manipulate equipment, lift, stoop, & bend in the delivery of safe patient care.
5. Satisfactory physical strength & endurance to be on one’s feet for extended periods & move heavy equipment, patients, and supplies. Sitting, walking, bending, & reaching motions are job requirements.
7. Time management of multiple priorities, multiple stimuli, & fast-paced environments.
8. Analysis and critical-thinking skills.

Admission Requirements: In addition to general college admission requirements, entry into the RT program requires students to:

1. Fulfill the following prerequisite courses included in the Health Science I Career Studies Certificate (CSC) by the end of the spring semester in the year the student is applying for acceptance into the associate degree.
2. ENG 111, PSY 230, SDV 101, RTH 102, BIO 141 (high school biology and chemistry completed within seven (7) years are prerequisites for BIO 141)
3. Complete the Virginia Math Placement testing through MTE 5
4. Submit a portfolio by February 1 to include a completed Respiratory Therapy program application and official transcript.
5. Meet with the program director, director of clinical education, or coordinator of distance education

Acceptance Process: Students are accepted into the Respiratory Therapy AAS degree based on completion of the prerequisite course requirements with a minimum GPA of 2.5 or higher (not to include SDV 101 as part of the GPA calculation) and competitive ranking of their GPA’s for the CSC RTH prerequisite courses. The program director will notify students by June 15 regarding acceptance.

Acceptance into Clinical Courses: Students who have been accepted into the program must secure transportation to and from facilities used for clinical experiences. Students enrolled in programmatic clinical rotations shall not receive any form of remuneration in exchange for their work. In addition, students shall not be substituted for paid staff and/or used simply as back-ups in the absence of appropriate paid staff during clinical rotations. Students will be placed in clinical courses (RTH 190 or higher) when they have submitted the following (at the student’s expense):

- Completed physical examination form provided by the program, which includes a yearly PPD and flu vaccination, as well as an immunization schedule.
- Documentation of a current CPR Basic Life Support Certification (American Heart Association), with biennial recertification.
- Certified background check and drug screening.
Note: Applicants who do not pass the background check and/or drug screening will not be allowed to enroll in any Respiratory Therapy clinical course. Without completing the clinical component of the program, students will not be eligible for employment as a student or RCP, or for curriculum completion.

Program Outcomes: Graduates will be able to:
1. Demonstrate competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by registered respiratory therapists (RRTs) through the NBRC Self-Assessment Exams and program clinical evaluations;
2. Apply critical thinking to the practice of respiratory care as measured by the NBRC Therapist Multiple-Choice Self-Assessment Exam with a score of 94 or higher;
3. Synthesize theory and clinical practice as measured by the NBRC Clinical Simulation Self-Assessment Exam with a combined score of 274 or higher on decision-making and information gathering; and
4. Demonstrate awareness of credentialing, job placement, interviewing, licensure, and professionalism within the field of respiratory care by completing RTH 227-Integrated Respiratory Therapy Skills II.

Industry Credentials: Students will have the opportunity to sit for the National Board for Respiratory Care's CRT credential.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
<td><strong>FIRST SEMESTER</strong></td>
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<td></td>
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</tr>
<tr>
<td>RTH 102</td>
<td>Integrated Sciences for Respiratory Care</td>
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<tr>
<td>RTH 110</td>
<td>Fundamental Theory &amp; Procedures for Respiratory Care</td>
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<td>RTH 121</td>
<td>Cardiopulmonary Science I</td>
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<tr>
<td>RTH 135</td>
<td>Diagnostic &amp; Therapeutic Procedures I</td>
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<td>RTH 145</td>
<td>Pharmacology for Respiratory Care I</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<tr>
<td>SDV 100</td>
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<td>23</td>
<td>17</td>
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</tbody>
</table>

| **SECOND SEMESTER** |               |           |                |         |
| RTH 112 | Pathology of the Cardiopulmonary System | 3 | 0 | 3 | 3 |
| RTH 131 | Respiratory Care Theory & Procedures I | 3 | 3 | 6 | 4 |
| RTH 190 | Coord. Internship in Respiratory Therapy – NCC I | 0 | 10 | 10 | 2 |
| RTH 190 | Coord. Internship in Respiratory Therapy – NCC II | 0 | 10 | 10 | 2 |
| BIO 141 | Human Anatomy and Physiology I | 3 | 3 | 6 | 4 |
| **Total** | 9 | 26 | 35 | 15 |

| **THIRD SEMESTER** |               |           |                |         |
| RTH 132 | Respiratory Care Theory & Procedures II | 3 | 3 | 6 | 4 |
| RTH 222 | Cardiopulmonary Science II | 3 | 0 | 3 | 3 |
| RTH 190 | Coord. Internship in Respiratory Therapy – NCC III | 0 | 10 | 10 | 2 |
| BIO 142 | Human Anatomy and Physiology II | 3 | 3 | 6 | 4 |
| **Total** | 9 | 16 | 25 | 13 |

| **FOURTH SEMESTER** |               |           |                |         |
| RTH 215 | Pulmonary Rehabilitation | 1 | 0 | 1 | 1 |
| RTH 290 | Coord. Internship in Resp. Therapy- ACC/NPCC I | 0 | 10 | 10 | 2 |
| RTH 290 | Coord. Internship in Resp. Therapy- ACC/NPCC II | 0 | 10 | 10 | 2 |
| RTH 295 | Topics in Resp. Therapy: Advanced Cardiac Life Support | 1 | 0 | 1 | 1 |
| RTH 223 | Cardiopulmonary Science III | 2 | 0 | 2 | 2 |
| RTH 226 | Theory of Neonatal & Pediatric Respiratory Care | 2 | 0 | 2 | 2 |
| _______ | Social/Behavioral Science Elective | 3 | 0 | 3 | 3 |
| _______ | Humanities/Fine Arts Elective | 3 | 0 | 3 | 3 |
| **Total** | 12 | 20 | 32 | 16 |

| **FIFTH SEMESTER** |               |           |                |         |
| RTH 236 | Critical Care Monitoring | 2 | 3 | 5 | 3 |
| RTH 290 | Coord. Internship in Resp. Therapy - ACC/NPCC III | 0 | 10 | 10 | 2 |
| RTH 290 | Coord. Internship in Resp. Therapy- ACC/NPCC IV | 0 | 10 | 10 | 2 |
| RTH 227 | Integrated Respiratory Therapy Skills II | 2 | 0 | 2 | 2 |
| **Total** | 4 | 23 | 27 | 9 |

1 RTH 135 fulfills the general education personal wellness requirement.
2 This course is included in the Pre-Respiratory Therapy Career Studies Certificate.
3 A list of approved general education electives (humanities/fine arts, social/behavioral science, mathematics, science, and personal wellness) is provided in the General Education section of the J. Sargeant Reynolds catalog under Curriculum Planning and Design.
This transfer degree is designed to prepare students for upper-level engineering courses at a four-year college or university. It is part of the University of Virginia’s “Produced in Virginia” initiative, which aims to increase the number of engineers graduated in the Commonwealth.

This program is rigorous. Students must feel comfortable doing high level math and science, regardless of area of specialization. Students who are not prepared in math are encouraged to take preparatory courses first and proceed at a slower pace to increase their likelihood of success.

Program Outcomes: Graduates will demonstrate the ability to:
2. Apply knowledge of math, sciences and engineering principles to engineering problems.
3. Conduct experiments, & analyze & interpret data.
4. Function in a team and to communicate effectively and professionally.
5. Describe professional & ethical responsibility.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
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<tr>
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<td>CHM 111 General Chemistry I</td>
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<td>EGR 126 Computer Programming for Engineers</td>
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<td>MTH 295* Topics in Math</td>
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<td>PHY 241 University Physics I</td>
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<td>CHM 112 General Chemistry II</td>
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### Engineering

**THIRD SEMESTER**

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<td>PHY 242 University Physics II</td>
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<td>EGR 140 Engineering Mechanics – Statics</td>
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**FOURTH SEMESTER**

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<td>MTH 267 Differential Equations</td>
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<td>EGR 245** Engineering Mechanics – Dynamics</td>
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<td>EGR 246** Mechanics of Materials</td>
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<td><strong>15</strong></td>
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</tbody>
</table>

*Students who are not prepared for Calculus should begin with Precalculus with Trigonometry (MTH 167) and should also consider following a three- or four-year sequence to complete this program. MTH 295 is a co-requisite for MTH 263.*

**Students may substitute college-level engineering or supportive discipline courses for engineering disciplines, such as electrical engineering. Substitutions must be approved by the division dean and engineering faculty.*

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### Science

**Award:** Associate of Arts and Science

**Plan Code:** 881  
**CIP Code:** 24.0101

This curriculum emphasizes mathematics and the biological and physical sciences. It also includes a range of courses in humanities and social sciences. Students have sufficient flexibility to select courses appropriate to the requirements of their intended transfer institution. Students should complete a DCC program comparable to the first two years of the program at the transfer institution.

**Program Outcomes:** Upon successful completion of this program, students will be able to:
1. Examine scientific and mathematic principles in everyday life.
2. Apply the significance of mathematics to all areas of science.
3. Communicate professionally within the respective disciplines of mathematics and science.
4. Work independently and collaboratively in the acquisition of scientific knowledge.

**Course Sequence**

**FIRST SEMESTER**

<table>
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<tr>
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**PROGRAM INFO**

**Minimum credits:** 60

**Length:** 2 years (4 semesters) if suggested full-time course sequence is followed.

**Transfer opportunities:**

This degree is designed for students planning to transfer to a four-year university for medical or other science-related programs of study.

Admission requirements vary by institution. Students are urged to familiarize themselves with the requirements of the college to which they intend to transfer and plan course selections with their DCC advisor. To learn more, visit [danville.edu/transfer](http://danville.edu/transfer).

**Division:** Arts, Sciences, & Business

**Contact:** 434.797.8462 or 434.797.8402

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**154 • Danville Community College**
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<th>SEMESTER</th>
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1. As with all transfer degrees, students should select the math sequence which will be most helpful in transferring to their intended four year college. If additional math courses are required, math courses may be used as approved electives.

2. Students must complete 20 Credits of lab science, including 4 credits taken at the sophomore level and at least one full-year lab sequence. Acceptable 100-level sequences are: CHM 111-112 General Chemistry I-II; BIO 101-102 General Biology I-II; BIO 141-142 Human Anatomy and Physiology I-II; GOL 105 Physical Geology & GOL 106 Historical Geology. Acceptable 200-level lab science sequences are: CHM 241-242 Organic Chemistry I-II with lab; PHY 201-202 General College Physics I-II; or PHY 241-242 University Physics I-II. Other non-sequential options are: BIO 150 Introductory Microbiology, and BIO 256 General Genetics.

3. This can be satisfied by a single 1 or more credit course in Health or Physical Education.

4. Acceptable literature sequences are: ENG 241-242 Survey of American Literature I-II; ENG 243-244 Survey of English Literature I-II; or ENG 251-252 Survey of World Literature I-II.

5. Students must complete a full year of social science coursework by taking one of the following sequences: ECO 201 and ECO 202; PLS 211 and PLS 212; SOC 200 and one sophomore level sociology course, or PSY 200 and one sophomore-level psychology course.
Technical & Workforce programs are designed to prepare graduates for immediate employment. These areas of study are a good fit for students who enjoy working with their hands, problem-solving, and applying practical techniques. Many certificate programs are short-term and provide the opportunity to earn valuable industry credentials to make graduates more competitive in the workplace.

**Technical Programs**

Air Conditioning:
- Air Conditioning & Refrigeration (Diploma) ................................. 157
- Air Conditioning & Refrigeration Servicing (Certificate) ................. 158

Automotive:
- Automotive Analysis & Repair (Diploma) ........................................ 159
- Automotive Analysis and Repair Fundamentals (Certificate) .......... 161

Cosmetology:
- Cosmetology (CSC) ........................................................................ 162

Electrical & Electronics:
- Electrical Concepts (CSC) ............................................................... 163
- Electronic Concepts (CSC) ............................................................... 163
- Electrical/Electronics Engineering Technology (Diploma) .............. 164
- Electrical/Electronics Equipment Servicing (Diploma) ..................... 166
- Industrial Electrical Principles (Certificate) ...................................... 168
- Industrial Electronic Principles (Certificate) ...................................... 168
- Technical Studies Electrical Utilities and Substation Technician (AAS) 170

Welding:
- Basic Welding (CSC) ........................................................................ 172
- Welding (Diploma) ........................................................................... 172
- Welding Technology (Certificate) ....................................................... 174

For graphic imaging technology, design, graphic communications, printing technology, and photography, please see the Arts, Design, & Humanities section on page 65.
**Award:** Diploma  

**Plan Code:** 900  
**CIP Code:** 47.0201

**Career Requirements:** Upon completion, the graduate will need to work 2 years in the field and have the ability to take their HVAC Journeyman licensure through the state of Virginia. The journeyman license must be held for one year in order to take the Virginia Master licensure. To own one's own business, a Master license must be obtained or held by someone within the company.

**Program Coordination:** The AC & Refrigeration Servicing Certificate provides 42 credits towards the diploma.

**Program Outcomes** Graduates will be able to:
1. Demonstrate mathematical skills to solve problems in electrical, refrigeration, air conditioning systems, gas heating systems, and oil heating systems.
2. Apply troubleshooting skills to diagnose and repair air flow, electrical, heating systems, and refrigeration systems.
3. Apply theory and knowledge learned to design and fabricate sheet metal projects dealing with HVAC.
4. Apply knowledge to install heating, air conditioning and refrigeration systems.
5. Ability to perform load calculations on residential and commercial buildings to size equipment and size duct systems properly.
6. Sit for the EPA Certification

**Industry Certifications:** Students will have the opportunity to sit for the OSHA 10 and EPA certifications.

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<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
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<td>AIR 154 Heating Systems I</td>
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| SECOND SEMESTER |               |           |                |         |
| AIR 118 Metal Layout II | 1 | 4 | 5 | 3 |
| AIR 121 Air Conditioning and Refrigeration I | 2 | 2 | 4 | 3 |
| AIR 135 Circuits and Controls II | 2 | 3 | 5 | 3 |
| AIR 155 Heating Systems II | 2 | 2 | 4 | 3 |
| AIR 165 Air Conditioning Systems I | 2 | 3 | 5 | 3 |
| Total | 9 | 14 | 23 | 15 |

| THIRD SEMESTER |               |           |                |         |
| AIR 122 Air Conditioning and Refrigeration II | 2 | 2 | 4 | 3 |
| AIR 136 Circuits and Controls III | 2 | 3 | 5 | 3 |
| AIR 156 Heating Systems III | 2 | 2 | 4 | 3 |
| AIR 254 Air Conditioning Systems IV | 2 | 3 | 5 | 3 |
| Total | 8 | 10 | 18 | 12 |

| FOURTH SEMESTER |               |           |                |         |
| AIR 137 Air Conditioning Electronics Survey | 1 | 3 | 4 | 2 |
| AIR 167 Air Conditioning Systems III | 3 | 3 | 6 | 4 |
| AIR 231 Circuits and Controls IV | 3 | 3 | 6 | 4 |
| AIR 273 Refrigeration III | 2 | 3 | 5 | 3 |
| ITE 116 Survey of Computer Software Applications (or approved sub) | 2 | 0 | 2 | 2 |
| Total | 11 | 12 | 23 | 15 |

**PROGRAM INFO**

**Minimum credits:** 74  
**Length:** 5 semesters (2 years), including summer, if suggested full-time course sequence is followed

**Career opportunities:**
- Heating, Air Conditioning, & Refrigeration Mechanic: $47,610 (median)  
  Job growth: 13% from 2018-2028
- Heating, Air Conditioning, & Refrigeration Installer: $47,610 (median)  
  Job growth: 13% from 2018-2028
- General Maintenance & Repair: $38,300 (median)  
  Job growth: 6%

*Median salaries & job growth nationwide as of 2018. BLS.gov*

**Division:** Workforce Services
**Contact:** 434.797.6437

Continued on next page
FIFTH SEMESTER
AIR 232  Circuits and Controls V  2  3  5  3
AIR 255  Air Conditioning Systems V  2  3  5  3
AIR 276  Refrigerant Usage EPA Certification  1  0  1  1
AIR 295  Green Technology  1  1  2  2
ECO 100  Elementary Economics (or approved sub)  3  0  3  3
HUM 165  Controversial Issues in Cotemporary American Culture (or approved sub)  3  0  3  3
Total  12  7  19  15

Award: Certificate
Plan Code: 903  CIP Code: 47.0201

This program prepares graduates for employment as a service technician in air conditioning and refrigeration. Topics include basic electricity, circuits and controls (electric and electronic), combustion devices (oil burners and gas burners), refrigeration and air conditioning (residential and commercial).

Career Requirements: Upon completion, the graduate will need to work 4 years in the field and have the ability to take their HVAC Journeyman licensure through the state of Virginia. Once the journeyman license is obtained, the individual must hold this license for one year and then has the ability to take the Master licensure through the state of Virginia. To own your own business, a Master license must be obtained or held by someone within the company.

Program Coordination: 41 of the 42 credits in the certificate (except for MKT 170) count towards the AC& Refrigeration Diploma.

Industry Certifications: Students will have the opportunity to sit for the OSHA 10 and EPA certifications.

Program Outcomes Graduates will be able to:
1. Demonstrate mathematical skills to solve problems in electrical, refrigeration, and air conditioning systems, gas heating systems, and oil heating systems.
2. Apply troubleshooting skills to diagnose and repair refrigeration, heating, & electrical systems.
3. Apply knowledge to install heating, air conditioning, and refrigeration systems.
4. Sit for the EPA Certification.

Lecture Lab Hours Credits
AIR 121  Air Conditioning and Refrigeration I  2  2  4  3
AIR 134  Circuits and Controls I  2  3  5  3
AIR 154  Heating Systems I  2  2  4  3
AIR 161  Heating, Air and Refrigeration Calculations I (or approved sub)  3  0  3  3
SAF 130  Industrial Safety - OSHA 10  1  0  1  1
SDV 100  College Success Skills  1  0  1  1
Total  11  7  18  14

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
AIR CONDITIONING & REFRIGERATION SERVICING

SECOND SEMESTER
AIR 122 Air Conditioning and Refrigeration II 2 2 4 3
AIR 135 Circuits and Controls II 2 3 5 3
AIR 155 Heating Systems II 2 2 4 3
AIR 276 Refrigerant Usage EPA Certification 1 0 1 1
ENG 131 Technical Report Writing I (or approved substitute) 3 0 3 3
HUM 165 Controversial Issues in Contemporary American Culture (or approved sub) 3 0 3 3
Total 13 7 20 16

THIRD SEMESTER
AIR 136 Circuits and Controls III 2 3 5 3
AIR 156 Heating Systems III 2 2 4 3
AIR 273 Refrigeration III 2 3 5 3
ITE 116 Survey of Computer Software Applications (or approved sub) 2 0 2 2
MKT 170 Customer Service (or approved sub) 1 0 1 1
Total 9 8 17 12

*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

AUTOMOTIVE ANALYSIS & REPAIR

Award: Diploma
Plan Code: 907    CIP Code: 47.0604

Students will learn the theory of repair & perform projects in the areas of automotive powertrain, including engines, transmissions, final drive systems, fuel & electrical systems, suspension repair & alignment, climate control systems, & computerized engine control diagnostics & repair. Students work in a well-equipped 10-bay shop with industry-standard equipment, including vehicle lifts, wheel alignment machines, powertrain hoists & jacks, parts & assembly cleaning equipment, electrical theory simulators & testing equipment, air conditioning refrigerant machines, computer controlled diagnostic testing & repair equipment for all types of electrical, safety & fuel control systems.

The program is accredited by the National Automotive Training Education Foundation (NATEF) at the Master Level. Admission Requirement s: Students should have an interest in automobiles and a good mechanical aptitude to be successful.

Applicants should also be aware of the following:
1. A basic automotive tool kit is required. Instructor will provide a tool list. Estimated cost: $300-600.
2. Books and online access cost an estimated $500.
3. A clean, valid driver’s license is normally required for careers in the automotive repair industry.

Program Outcomes: Graduates will be able to:
1. Use an automotive scan tool and a multi-meter to retrieve information and diagnose a modern automobile.
2. Work in teams to complete disassembly & reassembly of an automatic transmission.
3. Use precision measurement tools such as an outside micrometer & a torque wrench.
4. Complete a four-wheel brake job on a modern auto.
5. Successfully complete a Shop Safety Course.

PROGRAM INFO
Minimum credits: 72
Length: 5 semesters
Career opportunities:
Automotive Technician: $37,900-40,000 Job growth: 5-8% from 2014-2024
Automotive Machinist: $43,600 Job growth: 10%
Farm Equipment Mechanic & Service Tech: $37,050 Job growth: 2.5%
Parts salesperson: $30,500 Job growth: 7%
*Median salaries & job growth nationwide as of 2015. BLS.gov
Division: Workforce Services
Contact: 434.797.6437

Continued on next page

<table>
<thead>
<tr>
<th>Course Sequence</th>
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<td>AUT 127</td>
<td>Auto Lubrication &amp; Cooling Systems</td>
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<td>AUT 130</td>
<td>Intro to Auto Mechanics</td>
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| SECOND SEMESTER | AUT 121 | Automotive Fuel Systems | 3 | 3 | 6 | 4 |
|                 | AUT 241 | Automotive Electricity I | 3| 3 | 6 | 4 |
|                 | AUT 242 | Automotive Electricity II | 3| 3 | 6 | 4 |
|                 | AUT 265 | Automotive Braking Systems | 2| 3 | 5 | 3 |
| **Total**       |         |                      | 11| 12| 23| 15|

| THIRD SEMESTER (SUMMER) | AUT 230 | Intro to Alternative Fuels | 3| 0 | 3 | 3 |
|                         | AUT 236 | Auto Climate Control | 3| 3 | 6 | 4 |
|                         | AUT 266 | Auto Alignment, Suspension & Steering | 3| 3 | 6 | 4 |
| **Total** |         |                      | 9| 6 | 15| 11|

| FOURTH SEMESTER | AUT 122 | Auto Fuel Systems II | 3| 3 | 6 | 4 |
|                 | AUT 136 | Auto Vehicle Inspection | 1| 2 | 3 | 2 |
|                 | AUT 211 | Automotive Systems III | 3| 3 | 6 | 4 |
|                 | AUT 237 | Automotive Accessories | 2| 0 | 2 | 2 |
|                 | HUM 165 | Controversial Issues | 3| 0 | 3 | 3 |
| **Total** |         |                      | 13| 8 | 21| 15|

| FIFTH SEMESTER | AUT 178 | Automotive Final Drive and Manual Transmission Systems | 3| 3 | 6 | 4 |
|                | AUT 212 | Automotive Systems IV | 3| 3 | 6 | 4 |
|                | AUT 251 | Automatic Transmissions I | 2| 6 | 8 | 4 |
|                | ECO 100 | Elementary Economics | 3| 0 | 3 | 3 |
| **Total** |         |                      | 11| 12| 23| 15|
**AUTOMOTIVE ANALYSIS AND REPAIR FUNDAMENTALS**

**Award:** Career Studies Certificate

**Plan Code:** 221-909-01  **CIP Code:** 47.0604

**Length:** A student can complete this program in 1 year.

**Purpose:** The purpose of the Automotive Analysis and Repair Fundamentals Program is to help entry-level employees in the automotive and related trades to obtain job-specific knowledge and skills to improve their work performance and career status within the automotive analysis and repair program.

Completers will have entry level skills in the following occupational areas: auto parts sales, automotive repair assistant, lubrication & cooling systems assistant, brake system assistant.

**Admission Requirements:** Entry into this curriculum may be attained by meeting the general admission requirements established for the College.

**Occupational Objective:** Graduates of this program will have:
- Basic occupational skills for automotive analysis and repair fundamentals
- Basic skills and understanding of brakes, engines, lubrication and cooling systems.
- Basic understanding of terms and terminology in the automotive profession
- Knowledge of safety requirements for automotive occupations.
- Occupational preparation skills for employment.

**Program Description:** The program is designed to develop a general foundation of knowledge in automotive analysis and repair occupations with an emphasis on basic engines, brakes and lubrication systems. Students will also be given an introduction to general automotive safety, and employability skills.

**Program Outcomes:** Graduates of the Automotive Analysis and Repair Fundamentals program will:
- 100 % of program completers will know and demonstrate an understanding of automotive analysis and repair fundamentals at the 80% proficiency level.
- 100 % of the student completers will complete and pass the PS / 2 safety industry certification.
- 100 % of program completers will properly demonstrate the use of hand and power tools in the automotive fundamentals program.
- Practice fundamental automotive analysis and repair skills in the upkeep of automobiles
- 90 % of program completers will know and practice skills in the automotive analysis and repair occupation and obtain industry credentials in their specialized areas.

Industry Based Certifications may include: NATEF Certification in Brakes; Lubrication; Engine Repair and PS / 2 Automotive Safety

**Program Requirements:** To be awarded a Career Studies Certificate the student must complete all requirements and successfully complete the program as follows:

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<th>Lab Hours</th>
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*Median salaries & job growth nationwide as of 2015. BLS.gov*
COSMETOLOGY

Award: Career Studies Certificate

Plan Code: 221-190-03      CIP Code: 51.0999

Description: The primary purpose of the cosmetology program is to train the student in the basic manipulative skills, safety judgments, proper work habits, and desirable attitudes necessary to achieve competency in job entry-level skills, obtain licensure, and gainful employment in the field of cosmetology or related career fields.

Program Outcomes: Graduates will be able to:

1. Demonstrate knowledge of hair & skin care.
2. Understand manicuring and pedicuring.
3. Be prepared to gain a cosmetology license.
4. Understand salon management.

Course Sequence

FIRST SEMESTER
COS 081 Cosmetology Theory I 4
COS 082 Cosmetology Theory II 5
COS 198 Cosmetology Seminar & Project 3
Total 12

SECOND SEMESTER
COS 195 Cosmetology Theory III 4
COS 298 Projects in Cosmetology 3
COS 199 Supervised Study in Cosmetology 3
Total 10

THIRD/SUMMER SESSION
COS 295 Cosmetology Theory IV 4
COS 299 Supervised Study in Cosmetology 3
Total 7

Day students attend classes Monday through Friday, 8:30 a.m. - 5 p.m. After lecture, students spend the remainder of the day in the lab/salon to meet the 1,500-hour state board requirements.

Evening students have a different schedule. Please call for more information.

PROGRAM INFO

Minimum credits: 29
Length: 3 semesters, including a summer term
Career opportunities:
Hair stylist/Cosmetologist: $23,710 - 36,060
Job growth: 10% from 2014 to 2024
Manicurist/Pedicurist: $22,980 - 27,110
Skincare Specialist: $30,090
*Median salaries & job growth nationwide as of 2015. BLS.gov

Division: Workforce Services
Contact: 434.797.6437
ELECTRICAL CONCEPTS

Award: Career Studies Certificate

Plan Code: 221-940-05  CIP Code: 47.0105

Program provides basic skills needed for a career change, upgrading occupational skills and/or to provide entry-level skills in the electrical field. Additional career opportunities exist in electrical equipment sales and installation.

Program Coordination: This career studies certificate provides 19 credits towards the Industrial Electrical Principles, the Electrical Electronics Engineering Technology, and the Electrical Utilities and Substation Technician programs.

Program Outcomes: Graduates will be able to:
1. Understand the fundamentals, devices and components in both DC and AC circuits.
2. Apply knowledge of electrical principles in a laboratory setting with an emphasis on measurement and evaluation.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE152 E/E Calculations I</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ELE113 Basic Electricity I</td>
<td>3</td>
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<tr>
<td>ELE123 Electrical Applications I</td>
<td>1</td>
<td>2</td>
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<tr>
<td>ELE153 E/E Calculations II</td>
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<tr>
<td>ELE114 Basic Electricity II</td>
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<tr>
<td>ELE124 Electrical Applications II</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>ELE Approved Tech. Elective</td>
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<td><strong>Total</strong></td>
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<td>4-7</td>
<td>21-25</td>
<td>19</td>
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</table>

**ELECTRONIC CONCEPTS**

Award: Career Studies Certificate

Plan Code: 221-940-06  CIP Code: 47.0105

Program Coordination: This career studies certificate provides 19 credits towards the Industrial Electrical Principles certificate, the Electrical/Electronics Engineering Technology diploma, and the Electrical/Electronics Equipment Servicing diploma.

Program Outcomes: Graduates will demonstrate:
1. Knowledge of electronic devices as applied to basic circuits and systems.
2. Applied knowledge of electronics and circuits in a shop experience with an emphasis on measurements.

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Hours in Class</th>
<th>Credits</th>
</tr>
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<tr>
<td>ETR141 Electronics I</td>
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<td>ETR123 Electronic Applications I</td>
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<td>2</td>
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<td>ETR142 Electronics II</td>
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<td>0</td>
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<td>ETR124 Electronic Applications II</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>ELE/ETR 3 - Approved Tech. Electives (3 credits each)</td>
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<td>8-11</td>
<td>4-7</td>
<td>12-18</td>
<td>19</td>
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</table>

Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
Award: Diploma

Plan Code: 940-02  CIP Code: 47.0105

This program provides a general foundation in electricity, electronics, theorems, networks, and fundamental circuits.

Program Coordination: Typically, Electrical Electronics Engineering Technology Diploma (EEE Tech) students concurrently enroll in the Industrial Electrical Principles & Industrial Electronics Principles certificate programs, graduating with the diploma and two certificates. Graduates of the EEE Tech diploma program may take additional coursework (20 credits) and the coordinated internship to satisfy the requirements of the Electrical Electronics Equipment Servicing (EEE Servicing) diploma program.

Program Outcomes: Graduates will be able to:
1. Design, draw, construct, analyze, and troubleshoot basic series and parallel AC and DC electrical circuits, including all typical circuit elements, e.g. switches, fuses, resistors, lamps, and other loads, and explain the function of each component.
2. Design, draw, construct, analyze, and troubleshoot basic analog and digital electronic circuits.
3. Demonstrate understanding of digital and analog RF communications techniques, stages, devices, systems and equipment.
4. Identify, select, set up, and operate basic electronic test and measuring equipment, including ammeters, ohmmeters, voltmeters, clamp-on ammeters, multimeters, power supplies, function generators, RF generators, logic probes, curve tracers, and oscilloscopes, and explain the application of each.
5. Connect, configure, install, and program and modify Programmable Logic Controllers.
6. Build, configure, analyze, maintain, upgrade and troubleshoot personal computers.
7. Install, solder, inspect, and test circuit components, including conventional and surface-mounted devices.
8. Plan, construct, repair, operate and test custom-designed basic robotic devices.
9. Program microcontrollers, explain the function of each command, and demonstrate understanding of program flow.
10. Construct and analyze the function of microcontroller interface circuits.
11. Connect, configure, install and commission process control devices and systems.
12. Identify, explain, and utilize safety measures and equipment in the lab and workplace require by NFPA, NEC and OSHA.
13. Explain the characteristics and theories of operation of DC & AC single and multi-phase electric motors and motor control devices and circuits.
14. Identify, select, and properly use tools used in the electrical/electronics industry.
15. Research and learn unfamiliar devices, circuits, and systems, and explain these to others unfamiliar with them using oral and written presentations.
16. Demonstrate an understanding of commercial 3-phase electric power generation, transmission, distribution, and control, including 3-phase power generation, delta and wye connections, transformers and all associated calculations.
17. Demonstrate an understanding of alternative energy sources and how they relate to the generation, distribution, and control of residential, commercial, & industrial power.
18. Identify, select and install residential equipment.

Course Sequence
FIRST SEMESTER (FALL)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Hours</th>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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<tr>
<td>ITE 116</td>
<td>Computer Software</td>
<td>2</td>
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<td>ELE113</td>
<td>Basic Electricity I</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>ELE123</td>
<td>Electrical Applications I</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>ELE152</td>
<td>Calculations I</td>
<td>3</td>
<td>0</td>
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<tr>
<td>ELE 195</td>
<td>Topics in Battery Maintenance</td>
<td>1</td>
<td>3</td>
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Total: 11 5 16 13
## ELECTRICAL/ELECTRONICS ENGINEERING TECHNOLOGY

### SECOND SEMESTER (SPRING)

<table>
<thead>
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<td>ELE 114</td>
<td>Basic Electricity II</td>
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<tr>
<td>ELE 124</td>
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<tr>
<td>ETR 141</td>
<td>Electronics I</td>
<td>3</td>
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<td>ETR 123</td>
<td>Electronics Applications I</td>
<td>1</td>
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<tr>
<td>ETR 151</td>
<td>Electronic Circuits Troubleshooting I</td>
<td>2</td>
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<td>ELE 153</td>
<td>Calculations II</td>
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<td>0</td>
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<tr>
<td>ENG 131</td>
<td>Technical Report Writing I</td>
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### THIRD SEMESTER (SUMMER)

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<td>ELE 156</td>
<td>Electrical Control Systems</td>
<td>2</td>
<td>2</td>
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<td>ELE 131</td>
<td>National Electrical Code</td>
<td>3</td>
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<td>ETR 152</td>
<td>Electronic Circuits Troubleshooting II</td>
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<td>0</td>
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<tr>
<td>ETR 142</td>
<td>Electronics II</td>
<td>3</td>
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### FOURTH SEMESTER (FALL)

<table>
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<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
<td>3</td>
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<tr>
<td>ELE 239</td>
<td>Programmable Logic Controllers</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>ELE 216</td>
<td>Industrial Electricity</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>ETR 282</td>
<td>Digital Systems I</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>ELE 158</td>
<td>Surface Mount Soldering</td>
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### FIFTH SEMESTER (SPRING)

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<td>ECO 100</td>
<td>Economics</td>
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<tr>
<td>ELE 245</td>
<td>Industrial Wiring</td>
<td>2</td>
<td>2</td>
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<td>ELE 217</td>
<td>Electric Power Utilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ETR 180</td>
<td>Industrial Networking</td>
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### SIXTH SEMESTER (SUMMER)

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<th>Hours</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETR 136</td>
<td>Industrial Electronic Systems</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>ETR 241</td>
<td>Electronics Communications I</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td>INS 232</td>
<td>System Troubleshooting (PLC)</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>6</strong></td>
<td><strong>9</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

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**Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.**
Award: Diploma

Plan Code: 949  CIP Code: 47.0199

This is a specialized, concentrated work-study program designed for the full- or part-time student, with maximum flexibility for the worker. Those already employed in the field may receive advanced standing credit for the internship requirement.

The diploma’s first year includes core courses that provide a general foundation in electrical/electronic concepts, devices, networks and fundamental circuits and systems. Technical electives reinforce career objectives and must be approved by the student's faculty advisor.

Program Coordination: Graduates of the Electrical/Electronics Equipment Servicing (EEE Servicing) diploma program will simultaneously earn the career studies certificates in Electrical and Electronic Concepts and the certificates in Industrial Electric and Industrial Electronic Principles. Much of the coursework overlaps with the the Electrical Electronics Engineering Technology (EEE Tech) diploma program; EEE Tech students may choose to complete the additional 20 credits and coordinated internship to earn the EEE Servicing diploma as well.

Program Outcomes: Graduates will be able to:

1. Design, draw, construct, analyze, & troubleshoot basic series and parallel AC and DC electrical circuits, including all typical circuit elements, & explain the function of each.
2. Design, draw, construct, analyze, & troubleshoot basic analog & digital electronic circuits.
4. Identify, select, set up & operate basic electronic test and measuring equipment including ammeters, ohmmeters, voltmeters, clamp-on ammeters, multi-meters, power supplies, function generators, RF generators, logic probes, curve tracers and oscilloscopes, & explain the application of each.
5. Connect, configure, install, program and modify Programmable Logic Controllers.
6. Build, configure, analyze, maintain, upgrade & troubleshoot personal computers.
7. Plan, construct, repair, operate & test custom-designed basic robotic devices.
8. Program microcontrollers, explain the function of each command, & demonstrate understanding of program flow.
10. Connect, configure, install & commission process control devices and systems.
11. Identify, explain, & utilize safety measures & equipment in the lab & workplace required by NFPA, NEC and OSHA.
12. Explain the characteristics & theories of operation of DC & AC single & multi-phase electric motors & motor control devices and circuits.
13. Identify, select, and properly use tools used in the electrical/electronics industry.
14. Demonstrate an understanding of commercial 3-phase electric power generation, transmission, distribution, and control, including 3-phase power generation, delta and wye connections, transformers and all associated calculations.
15. Demonstrate an understanding of alternative energy sources and how they relate to the generation, distribution, and control of residential, commercial, and industrial power.
16. Demonstrate a basic familiarity with fluid mechanics concepts and equipment.
17. Identify, select, and install residential, commercial and industrial electrical devices and equipment.
18. Demonstrate experience in the field of Electrical Electronic Equipment Servicing or equivalent coursework.

Continued on next page
### Course Sequence

#### FIRST SEMESTER (FALL)
- **SDV 100**  College Success Skills  
  - Hours: 1  
  - Hours in Class: 1  
  - Credits: 1  
- **ELE113**  Basic Electricity I  
  - Hours: 3  
  - Hours in Class: 3  
  - Credits: 3  
- **ELE123**  Electrical Applications I  
  - Hours: 1  
  - Hours in Class: 2  
  - Credits: 2  
- **ELE152**  Calculations I  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ENG 131**  Technical Report Writing I  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  

**Total**  
- Hours: 11  
- Hours in Class: 2  
- Credits: 12

#### SECOND SEMESTER (SPRING)
- **ELE114**  Basic Electricity II  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ELE124**  Electrical Applications II  
  - Hours: 1  
  - Hours in Class: 2  
  - Credits: 2  
- **ETR141**  Electronics I  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ETR123**  Electronics Applications I  
  - Hours: 1  
  - Hours in Class: 2  
  - Credits: 2  
- **ETR151**  Electronic Circuits & Troubleshooting  
  - Hours: 2  
  - Hours in Class: 0  
  - Credits: 2  
- **ECO 100**  Elementary Economics  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  

**Total**  
- Hours: 13  
- Hours in Class: 4  
- Credits: 15

#### THIRD SEMESTER (SUMMER)
- **ELE156**  Electrical Control Systems  
  - Hours: 2  
  - Hours in Class: 2  
  - Credits: 3  
- **ETR142**  Electronics II  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ETR152**  Electronic Circuits & Troubleshooting II  
  - Hours: 2  
  - Hours in Class: 0  
  - Credits: 2  
- **ETR124**  Electronics Applications II  
  - Hours: 1  
  - Hours in Class: 2  
  - Credits: 2  

**Total**  
- Hours: 8  
- Hours in Class: 4  
- Credits: 10

#### FOURTH SEMESTER (FALL)
- **ELE216**  Industrial Electricity  
  - Hours: 2  
  - Hours in Class: 3  
  - Credits: 3  
- **ETR282**  Digital Systems I  
  - Hours: 2  
  - Hours in Class: 3  
  - Credits: 3  
- **ELE131**  National Electric Code I  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ETR149**  PC Upgrade and Repair  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  

**Total**  
- Hours: 10  
- Hours in Class: 6  
- Credits: 12

#### FIFTH SEMESTER (SPRING)
- **ELE239**  Programmable Logic Controllers  
  - Hours: 2  
  - Hours in Class: 3  
  - Credits: 3  
- **ELE132**  National Electric Code II  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ELE190**  Coordinated Internship  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **HUM 165**  Controversial Issues  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  
- **ETR295**  Topics in E/E(Schematic Reading)  
  - Hours: 1  
  - Hours in Class: 0  
  - Credits: 1  

**Total**  
- Hours: 12  
- Hours in Class: 3  
- Credits: 13

#### SIXTH SEMESTER (SUMMER)
- **ETR136**  Industrial Electronic Systems  
  - Hours: 2  
  - Hours in Class: 3  
  - Credits: 3  
- **ELE240**  Advanced PLCs  
  - Hours: 2  
  - Hours in Class: 3  
  - Credits: 3  
- **ITE116**  Survey of Computer Software Applications  
  - Hours: 2  
  - Hours in Class: 0  
  - Credits: 2  
- **PSY126**  Psychology for Business & Industry  
  - Hours: 3  
  - Hours in Class: 0  
  - Credits: 3  

**Total**  
- Hours: 9  
- Hours in Class: 6  
- Credits: 11
Award: Certificate

INDUSTRIAL ELECTRICAL PRINCIPLES
Plan Code: 942  CIP Code: 46.0302

INDUSTRIAL ELECTRONIC PRINCIPLES
Plan Code: 925  CIP Code: 15.0303

Program Coordination: These two certificate programs are generally not taken alone, but are usually pursued concurrently with either the EEE Technology Diploma or EEE Servicing Diploma, with several overlapping courses and requirements.

Program Outcomes: Graduates will be able to:
1. Design, draw, construct, analyze, & troubleshoot basic series & parallel AC & DC electrical circuits, including all typical circuit elements, & explain the function of each.
2. Design, draw, construct, analyze, & troubleshoot basic analog electronic circuits.
3. Identify, select, set up & operate basic electronic test and measuring equipment including ammeters, ohmmeters, voltmeters, clamp-on ammeters, multi-meters, power supplies, function generators, & oscilloscopes & explain the application of each.
4. Demonstrate an understanding of commercial 3-phase electric power generation.

### Course Sequence

#### INDUSTRIAL ELECTRICAL PRINCIPLES

**FIRST SEMESTER**
- **SDV 100** College Success Skills  
  Lecture: 1  
  Lab: 0  
  Hours in Class: 1  
  Credits: 1  
- **ELE 113** Basic Electricity I  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 123** Electrical Applications I  
  Lecture: 1  
  Lab: 2  
  Hours in Class: 3  
  Credits: 2  
- **ELE 152** Calculations I  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ENG 131** Technical Report Writing  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 148** Power Distribution Systems  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  

**Total**  
Lecture: 14  
Lab: 2  
Hours in Class: 16  
Credits: 15

**SECOND SEMESTER**
- **ELE 114** Basic Electricity II  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 124** Electrical Applications II  
  Lecture: 1  
  Lab: 2  
  Hours in Class: 3  
  Credits: 2  
- **ELE 153** Calculations II  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 148** Power Distribution Systems  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 239** Programmable Logic Controllers  
  Lecture: 2  
  Lab: 3  
  Hours in Class: 5  
  Credits: 3  

**Total**  
Lecture: 12  
Lab: 5  
Hours in Class: 17  
Credits: 14

**THIRD SEMESTER**
- **ELE 156** Electrical Control Systems  
  Lecture: 2  
  Lab: 2  
  Hours in Class: 4  
  Credits: 3  
- **ITE 116** Survey of Computer Software Applications  
  Lecture: 2  
  Lab: 0  
  Hours in Class: 2  
  Credits: 2  
- **ECO 100** Elementary Economics  
  Lecture: 3  
  Lab: 0  
  Hours in Class: 3  
  Credits: 3  
- **ELE 240** Advanced Programmable Logic Controllers  
  Lecture: 2  
  Lab: 3  
  Hours in Class: 5  
  Credits: 3  
- **ELE 217** Electric Power Utilities  
  Lecture: 1  
  Lab: 2  
  Hours in Class: 3  
  Credits: 2  

**Total**  
Lecture: 10  
Lab: 6  
Hours in Class: 16  
Credits: 13

*Median salaries & job growth nationwide as of 2018. BLS.gov*

Division: Workforce Services
Contact: 434.797.6437

Continued on next page
### INDUSTRIAL ELECTRICAL PRINCIPLES

& INDUSTRIAL ELECTRONIC PRINCIPLES

Continued from previous page

#### INDUSTRIAL ELECTRONIC PRINCIPLES\(^{G3}\)

**FIRST SEMESTER**

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<td>ELE 248 Microcontroller Program Interface</td>
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\(^{G3}\)Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
TECHNICAL STUDIES ELECTRICAL UTILITIES AND SUBSTATION TECHNICIAN*

PROGRAM INFO
Minimum credits: 68
Length: 5 semesters (2 years), including two summers
Career opportunities:
Electrician: $55,590
Electrical Electronics Installer and Repairer: $55,160
Electrical Electronics Repairers, Power House, Substation, & Relay Technicians: $78,030
*Median salaries & job growth nationwide as of 2017. BLS.gov
Division: Workforce Services
Contact: 434.797.6437

Award: Technical Studies AAS
Description: Program provides a general foundation in power utility, electricity, electronics, theorems, networks, and fundamental circuits.
Career Opportunity: Career options include System Protection, Equipment Specialist, Substation technician, level 1 Electrician in all areas of the power industry. Level 1 Electrician in all areas of Industry, Automation, Instrumentation, and technician Electrical/Electronic and Electrical Maintenance
(Median Salaries Nationwide as of 2017. Source BLS.gov $78,030)
Length: A full-time student can complete this program in 5 semesters.

Admission Requirements: General college admission requirements.

Program Outcomes: Graduates will be able to:
1. Design, draw, construct, analyze, and troubleshoot basic series and parallel AC and DC electrical circuits including all typical circuit elements including switches, fuses, resistors, lamps and other loads and explain the function of each component.
2. Understand and be able to demonstrate knowledge of transmission and distribution of Electricity.
3. Know Transformer operation and calculations.
4. Demonstrate an understanding of commercial 3-phase electric power generation, distribution and control including three-phase power generation, delta and wye connections and transformers.
5. Understand Battery Banks and optimise battery operation.
6. Demonstrate battery maintenance and testing techniques.
9. Identify, select, set up and operate basic electronic test and measuring equipment including ammeters, ohmmeters, voltmeters, clampion ammeters, multimeters, power supplies, function generators, RF generators, logic probes, curve

Continued on next page
10. Connect, configure, install, program and modify Programmable Logic Controllers.
11. Troubleshoot Programmable Logic Controllers.
12. Connect, configure, install and commission process control devices and systems.
13. Identify, explain, and utilize safety measures and equipment in the lab and the workplace required by NFPA, NEC and OSHA.
14. Explain the characteristics and theories of operation of DC and AC single and multiphase electric motors and motor control devices and circuits.
15. Research and learn unfamiliar devices, circuits and systems and explain these to others unfamiliar with them using oral and written presentations.
16. Identify, select and properly use tools that are used in the electrical and electronics industry.
17. Demonstrate an understanding of alternative energy sources and how they relate to the generation, distribution and control of residential, commercial, and industrial power.
18. Identify, select and install residential, commercial and industrial electrical devices and equipment.

This is a specialized program designed for the full- or part-time student, with maximum flexibility for the worker. Those already employed in the field may receive advanced standing credit for the internship requirement.

Course Sequence

FIRST YEAR FALL SEMESTER
- SDV 100 College Success Skills 1 0 1 1
- ITE 116 Computer software 2 0 2 2
- ELE 113 Basic Electricity I 3 0 3 3
- ELE 123 Electricity Applications I 1 2 3 2
- MTH 115 Technical Mathematics I 3 0 3 3
- ELE 195 Topics in Battery Maintenance 1 3 4 2
- ENE 195 Power Utility Fundamentals 2 0 2 2
- Total 13 5 18 15

FIRST YEAR SPRING SEMESTER
- ELE 114 Basic Electricity II 3 0 3 3
- ELE 124 Electricity Applications II 1 2 3 2
- HUM 165 Controversial Issues 3 0 3 3
- MTH 116 Technical Mathematics II 3 0 3 3
- ETR 141 Electronics I 3 0 3 3
- ENG 111 College Composition I 3 0 3 3
- Total 16 2 18 17

FIRST YEAR SUMMER TERM
- ELE 156 Electrical Control Systems 2 2 4 3
- ENG 131 Technical Writing 3 0 3 3
- ELE 148 Power Distribution Systems 3 0 3 3
- Total 8 2 10 9

SECOND YEAR FALL SEMESTER
- ELE 239 Programmable Logic Controls 2 3 5 3
- ELE 216 Industrial Electricity 2 3 5 3
- ETR 282 Digital Systems I 2 3 5 3
- ELE 145 Transformer Connections and Circuits 1 3 4 2
- ENE 295 Topics in Utility Print Reading 2 0 2 2
- Total 9 12 21 13

SECOND YEAR SPRING SEMESTER
- ELE 293 Studies in System Protection 2 2 4 3
- ETR 180 Industrial Networking 2 0 2 2
- ELE 240 Advanced PLC 2 2 4 3
- ENE 295 Substation Diagnostic Testing/Troubleshooting 2 2 4 3
- ECO 100 Elementary Economics 3 0 3 3
- Total 11 6 17 14

Continued from previous page
**BASIC WELDING** G3

**Award:** Career Studies Certificate

**Plan Code:** 221-995-03  **CIP Code:** 48.0508

**Program Outcomes:** Graduates of this program will:
1. Have the opportunity to earn AWS certification.
2. Demonstrate basic knowledge of welding terms and definitions.
3. Demonstrate basic Metal Arc / MIG / TIG Welding skills.
4. Demonstrate layout and blueprint reading skills.

**Industry Credentials:** A student will have the opportunity to qualify and earn certifications in the following areas AWS – ARC 1g & 3g plate, AWS GMAW, AWS 3g & 4g plate

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G3*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.

**WELDING** G3

**Award:** Diploma

**Plan Code:** 707  **CIP Code:** 48.0508

**Program Outcomes:** Graduates will be able to:
1. Be prepared to obtain AWS certifications.
2. Program and complete welds using robotic welding processes.
3. Complete welding projects using available hydraulic metal shaping equipment.
4. Use industry purchasing & billing practices.
5. Prepare welded coupons and visual and destructive test for quality.
6. Examine basic welding codes and their effect on quality control.

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<th>Course Sequence</th>
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*Median salaries & job growth nationwide as of 2017. BLS.gov

**BASIC INSTRUMENTATION** G3

**Award:** Career Studies Certificate

**Plan Code:** 221-995-03  **CIP Code:** 48.0508

**Program Outcomes:** Graduates of this program will:
1. Have the opportunity to earn AWS certification.
2. Demonstrate basic knowledge of welding terms and definitions.
3. Demonstrate basic Metal Arc / MIG / TIG Welding skills.
4. Demonstrate layout and blueprint reading skills.

**Industry Credentials:** A student will have the opportunity to qualify and earn certifications in the following areas AWS – ARC 1g & 3g plate, AWS GMAW, AWS 3g & 4g plate

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G3*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.
WELDING

Continued from previous page

SECOND SEMESTER

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<td>Welding II (Electric Arc)</td>
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<td>Welding Drawing &amp; Interpretation WEL</td>
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<td>Gas Metal Arc Welding</td>
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*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
**WELDING TECHNOLOGY**

**Award:** Certificate

**Plan Code:** 995  **CIP Code:** 48.0508

**Program Coordination:** 5 courses of the Basic Welding and Welding CSCs feed into the certificate. Graduates of the certificate program may complete the Welding Diploma with an additional two semesters.

**Program Outcomes:** Graduates will be able to:
1. Understand and follow industry safety practices.
2. Display manipulative skills with various welding processes to assure adequate weld integrity and appearance.
3. Weld in flat, vertical, and horizontal positions using the SMAW, GMAW, GTAW processes.
4. Cut metals using the oxyfuel and plasma arc cutting process.
5. Be capable of entering an entry-level welding position with possibility of advancement.

**Course Sequence**

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*Additional financial assistance might be available for G3 programs. Please contact your advisor or counselor for more information.*
Course Descriptions

Alphabetical by Program Area

Note: Courses separated by hyphens, e.g. ENG 111-112, must be taken in sequence. Courses separated by commas, e.g. HIS 101, HIS 102, do not have to be taken in sequence

(ACC) Accounting

ACC 105 - Office Accounting (3 cr.)
Presents practical accounting. Covers the accounting cycle—journals, ledgers, working papers, closing of books—payrolls, financial statements, accounting forms and practical procedures.

ACC 110 - Introduction to Computerized Accounting (2 cr.)

ACC 111 - Accounting I (3 cr.)
Presents fundamental accounting concepts and principles governing the accounting cycle, journals, ledgers, working papers, and preparation of financial statements for sole proprietorships. A laboratory co-requisite (ACC 113) may be required as identified by the college.

ACC 112 - Accounting II (3 cr.)
Covers fundamental accounting concepts and principles governing the accounting cycle, journals, ledgers, working papers, and preparation of financial statements for sole proprietorships. A laboratory co-requisite (ACC 114) may be required as identified by the college.

ACC 211 - Principles of Accounting I (3 cr.)
Introduces accounting principles with respect to financial reporting. Demonstrates how decision makers use accounting information for reporting purposes. Focuses on the preparation of accounting information and its use in the operation of organizations, as well as methods of analysis and interpretation of accounting information. A laboratory co-requisite (ACC 213) may be required as identified by the college.

ACC 212 - Principles of Accounting II (3 cr.)
Introduces accounting principles with respect to cost and managerial accounting. Focuses on the application of accounting information with respect to product costing, as well as its use within the organization to provide direction and to judge performance. Prerequisite: ACC 211; A laboratory co-requisite (ACC 214) may be required as identified by the college.

ACC 220 - Accounting for Small Business (3 cr.)
Presents practical accounting procedures for small business operations including service occupations, retail stores, and manufacturing operations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payrolls, and checking account management. Includes regulations applicable to payroll, self-employment, social security and other taxes.

ACC 221 - Intermediate Accounting I (4 cr.)
Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Prerequisite ACC 212 or equivalent.

ACC 222 - Intermediate Accounting II (4 cr.)
Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Prerequisite ACC 221 or equivalent.

ACC 231 - Cost Accounting I (3 cr.)
Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. Prerequisite ACC 212 or equivalent.

ACC 241 - Auditing I (3 cr.)
Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques and other topics. Prerequisite or co-requisite ACC 212 or equivalent.

ACC 261 - Principles of Federal Taxation I (3 cr.)
Presents the study of federal taxation as it relates to individuals and related entities. Includes tax planning, compliance, and reporting.

ACC 262 - Principles of Federal Taxation II (3 cr.)
Presents the study of federal taxation as it relates to partnerships, corporations, and other tax entities. Includes tax planning, compliance, and reporting.

(ADJ) Administration of Justice

ADJ 100 - Survey of Criminal Justice (3 cr.)
Presents an overview of the United States criminal justice system; introduces the major system components—law enforcement, judiciary, and corrections. Lecture 3 hours per week. 3 credits.

ADJ 116 - Special Enforcement Topics (3 cr.)
Considers contemporary issues, problems, and controversies in modern law enforcement.

ADJ 118 - Crisis Intervention and Critical Issues (3 cr.)
Addresses basic problems involved in crisis intervention and current critical issues in law enforcement and the
ADJ 130 - Introduction to Criminal Law (3 cr.)
Surveys the general principles of American criminal law, the elements of major crimes, and the basic steps of prosecution procedure. Lecture 3 hours per week. 3 credits.

ADJ 131 - Legal Evidence (3 cr.)
Surveys the identification, degrees, and admissibility of evidence for criminal prosecution; examines pre-trial and trial procedures as they pertain to the rules of evidence.

ADJ 133 - Ethics and the Criminal Justice Professional (3 cr.)
Examines ethical dilemmas pertaining to the criminal justice system, including those in policing, courts and corrections. Focuses on some of the specific ethical choices that must be made by the criminal justice professional. Lecture 3 hours per week. 3 credits.

ADJ 140 - Introduction to Corrections (3 cr.)
Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system.

ADJ 145 - Corrections and the Community (3 cr.)
Studies and evaluates the relationships and interactions between correctional organizations and free society. Focuses on the shared responsibility of the community and corrections agencies to develop effective programs for management and treatment of criminal offenders.

ADJ 150 - Introduction to Security Administration (3 cr.)
Introduces the student to the field of private security--its history, structures, functions, and personnel; surveys the principles and practices of security administration.

ADJ 161 - Introduction to Computer Crime (3 cr.)
Provides a basic introduction to the nature of computer crimes, computer criminals, relevant law, investigative techniques, and emerging trends.

ADJ 171 - Forensic Science I (4 cr.)
Introduces student to crime scene technology, procedures for sketching, diagramming and using casting materials. Surveys the concepts of forensic chemistry, fingerprint classification/identification and latent techniques, drug identification, hair and fiber evidence, death investigation techniques, thin-layer chromatographic methods, and arson materials examination.

ADJ 215 - Report Writing (3 cr.)
Introduces the basic mechanics and procedures of report writing; emphasizes clear, concise and accurate writing of communications as they relate to law enforcement records, investigations, and research.

ADJ 227 - Constitutional Law for Justice Personnel (3 cr.)
Surveys the basic guarantees of liberty described in the U. S. Constitution and the historical development of these restrictions on government power, primarily through U. S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system.

ADJ 234 - Terrorism and Counter-Terrorism (3 cr.)
Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter terrorist efforts domestically and internationally.

ADJ 236 - Principles of Criminal Investigation (3 cr.)
Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence.

ADJ 257 - Loss Prevention (3 cr.)
Studies internal and external theft that affects all private and public operations, with focus on retail businesses. Examines and evaluates major loss prevention programs used by security operations, again with focus on retail security.

ADJ 296 - On-Site Training (1-5 cr.)
Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(AIR) Air Conditioning and Refrigeration

AIR 111-112 - Air Conditioning and Refrigeration Controls I-II (3 cr. each)
Presents electron theory, magnetism, Ohm's Law, resistance, current flow, instruments for electrical measurement, A.C. motors, power distribution controls and their application. Part I and II of II.

AIR 117 - Metal Layout I (3 cr.)
Presents measuring and gauging of sheet metal, types of metal, handling sheet metal, cutting and bending, layout. Teaches fundamentals of drafting, basic drawing instruments, lettering practices.

AIR 118 - Metal Layout II (3 cr.)
Presents practice in the laying out of various sheet metal pieces on paper and transposing to metal.

AIR 121 - Air Conditioning and Refrigeration I (3 cr.)
Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents
charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Part I of II.

AIR 122 - Air Conditioning and Refrigeration II (3 cr.)
Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Part II of II.

AIR 231 – Circuits IV (4 cr.)
Applies controls and control circuits to air conditioning and refrigeration, including components, pilot devices and controls, and circuit diagrams.

AIR 134 - Circuits and Controls I (3-4 cr.)
Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing and servicing. Introduces electricity for air conditioning which includes circuit elements, direct current circuits and motors, single and three-phase circuits and motors, power distribution systems, and protective devices. Studies the electron and its behavior in passive and active circuits and components. Demonstrates electronic components and circuits as applied to air conditioning system. Part I of II. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-9 hours per week. 3-4 credits

AIR 135 - Circuits and Controls II (3-4 cr.)
Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing and servicing. Introduces electricity for air conditioning which includes circuit elements, direct current circuits and motors, single and three-phase circuits and motors, power distribution systems, and protective devices. Studies the electron and its behavior in passive and active circuits and components. Demonstrates electronic components and circuits as applied to air conditioning system. Part II of II. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-9 hours per week. 3-4 credits

AIR 136 - Circuits and Controls III (3 cr.)
Introduces types of circuits and controls used in home, commercial and industrial air conditioning systems. Includes servicing and installation procedures for electrical unloading of compressors, single- and two-stage thermostats, and electrical regulation of fan speed for air volume control. Explains operational and safety control and how schematic and pictorial diagrams are used in these systems. Lecture 2-3 hours. Laboratory 3-6 hours. Total 4-9 hours per week. 3-4 credits

AIR 137 - Air Conditioning Electronics Survey (2 cr.)
Studies electronics and its applications in the HVAC field. Covers computers, programmable controllers, and microprocessors in the HVAC industry. Prerequisite: AIR 134 or approval.

AIR 154 - Heating Systems I (3 cr.)
Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part I of II.

AIR 155 - Heating Systems II (3 cr.)
Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part II of II.

AIR 156 - Heating Systems III (3 cr.)
Introduces types of boilers, sizing boilers, sizing radiators and convectors, designing piping systems for steam, hot water and vacuum systems. Includes testing and servicing wet heat systems.

AIR 161 - Heating, Air Conditioning and Refrigeration Calculations I (3 cr.)
Introduces fractions, decimals, sign of operations, equations, Ohm’s Law, subtraction, multiplication and division of signed numbers. Teaches fundamentals of algebra, expression of stated problems in mathematical form, and solutions of equations.

AIR 165 - Air Conditioning Systems I (3 cr.)
Introduces comfort survey, house construction, load calculations, types of distribution systems, and equipment selection. Introduces designing, layout, installing and adjusting of duct systems, job costs, and bidding of job. Part I of II.

AIR 166 - Air Conditioning Systems II (3 cr.)
Introduces designing, layout, installation, and adjusting of duct systems, job costs, and bidding of job. Prerequisite: AIR 165 or approval. Part II of II.

AIR 167 - Air Conditioning Systems III (4 cr.)
Introduces building survey, commercial load calculations, design conditions, solar heat gain, ventilation, internal heat gains, cooling, heating and humidification with water psychometrics distribution systems, ice and water for air conditioning

AIR 231 - Circuits and Controls IV (4 cr.)
Applies controls and control circuits to air conditioning and refrigeration, including components, pilot devices and controls, and circuit diagrams.
AIR 232 - Circuits and Controls V (3 cr.)
Examines electronics and servicing, including soldering, troubleshooting, and repair of electronic and control devices. Requires knowledge of digital and analog electronics. 

AIR 254 - Air Conditioning Systems IV (3 cr.)
Introduces the use of refrigerant charge in HVAC/R systems. Covers the selection and application of refrigeration components, including compressors, condensers, and expansion devices. Requires knowledge of refrigerant properties and safety procedures.

AIR 255 - Air Conditioning Systems V (3 cr.)
Continues the study of refrigeration systems, including the operation and maintenance of air conditioning equipment. Requires knowledge of refrigerant charge and safety procedures.

AIR 272 - Refrigeration III (3 cr.)
Provides a working introduction to the design and installation of refrigeration systems. Requires knowledge of refrigerant properties and safety procedures.

AIR 273 - Refrigerant Usage EPA Certification (1 cr.)
Prepares HVAC technicians for a refrigerant certification test. Includes an understanding of refrigerant recovery, recycle, and reclamation procedures. Requires knowledge of refrigerant properties and safety procedures.

AIR 276 - Refrigerant Usage EPA Certification (1 cr.)
Prepares HVAC technicians for a refrigerant certification test mandated by the Environmental Protection Agency (EPA). Includes an understanding of refrigerant recovery, recycle, and reclamation procedures for service work associated with air conditioning and refrigeration. Requires knowledge of refrigerant properties and safety procedures.

ART 180 - Introduction to Computer Graphics (3 cr.)
Introduces the basics of operating platforms and standard electronic technology used by visual artists and designers. Provides a working introduction to computer-based multimedia: text, graphics, animation, sound, and video, and explores how they combine to create multimedia products. Requires knowledge of computer graphics and multimedia design.

ART 130 - Introduction to Multimedia (4 cr.)
Introduces multimedia to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create multimedia products. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Requires knowledge of multimedia design and multimedia production.

ART 131-132 - Fundamentals of Design I-II (3 cr. each)
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Part I and II of II. This is a Passport Transfer course.

ART 101-102 - History and Appreciation of Art I-II (3 cr. each)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

ART 254 - History and Appreciation of Art I (3 cr.)
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to the present. Part I and II of II. This is a Passport Transfer course.

ART 254 - History and Appreciation of Art II (3 cr.)
Explores the visual arts conceptually rather than historically. Develops a non-technical understanding of spatial arts such as architecture and industrial design. Includes painting, sculpture, and graphics.

ART 105 - Art in World Culture (3 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

ART 106 - Art in World Culture (3 cr.)
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to the present. Part I and II of II. This is a Passport Transfer course.

ART 105 - Art in World Culture (3 cr.)
Explores the visual arts conceptually rather than historically. Develops a non-technical understanding of spatial arts such as architecture and industrial design. Includes painting, sculpture, and graphics.

ART 116 - Design for the Web I (3 cr.)
Prepares HVAC technicians for a refrigerant certification test mandated by the Environmental Protection Agency (EPA). Reviews refrigerant recovery, recycle, and reclamation procedures for service work associated with air conditioning and refrigeration. Examines environmental impact including ozone depletion resulting from refrigeration utilization. Students should have previous training and/or working knowledge of vapor-compression, common service equipment and procedures in HVAC/R.

ART 116 - Design for the Web II (3 cr.)
Prepares HVAC technicians for a refrigerant certification test mandated by the Environmental Protection Agency (EPA). Reviews refrigerant recovery, recycle, and reclamation procedures for service work associated with air conditioning and refrigeration. Examines environmental impact including ozone depletion resulting from refrigeration utilization. Students should have previous training and/or working knowledge of vapor-compression, common service equipment and procedures in HVAC/R.

ART 121 - Drawing I (3 cr.)
Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create multimedia products. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Computer literacy is suggested.

ART 122 - Drawing II (3 cr.)
Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create multimedia products. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Computer literacy is suggested.

ART 131-132 - Fundamentals of Design I-II (3 cr. each)
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Part I and II of II.

ART 130 - Introduction to Multimedia (4 cr.)
Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create a multimedia product. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Computer literacy is suggested.

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Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Part I and II of II.

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Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create multimedia products. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Computer literacy is suggested.
industry software. Introduces problems in which students can explore creative potential of the new electronic media environment.

ART 193 - Studies In (1-5 cr.)
Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. Variable hours per week.

ART 201 - History of Art I (3 cr.)
Studies the historical context of art of the ancient, medieval, Renaissance and modern worlds. Includes research project. Part I of II. This is a Passport Transfer course.

ART 202 - History of Art II (3 cr.)
Studies the historical context of art of the ancient, medieval, Renaissance and modern worlds. Includes research project. Part II of II. This is a Passport Transfer course.

ART 208 - Video Techniques (4 cr.)
Addresses the fundamentals of video technology and non-linear video editing. Focuses on the aesthetics of time-code editing using current industry software. Teaches a student to shoot and capture video and record and edit sound, and combine artwork, animation, video, and sound in the creation of professional-quality original video projects. Prerequisite is ART 130 Multimedia I.

ART 231 - Sculpture I (3 cr.)
Introduces sculptural concepts and methods of production in traditional and contemporary media. Includes clay, plaster, wood, stone, metal, plastics and terra cotta. May include field trips. Prerequisite ART 131. Part I of II.

ART 241 - Painting I (3 cr.)
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Part I of II.

ART 242 - Painting II (3 cr.)
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Prerequisites ART 122 or divisional approval. Part II of II.

ART 243 - Watercolor I (3 cr.)
Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique and value. Prerequisite ART 131, or divisional approval. Part I of II.

ART 244 - Watercolor II (3 cr.)
Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique and value. Prerequisite ART 131, or divisional approval. Part II of II.

ART 248 - Painting III (3 cr.)
Introduces advanced concepts and techniques of representational and abstract painting as applied to the head/figure, still-life, landscape and other subject matter including non-objective painting. Gives additional instruction in color, composition, modeling, space and perspective. Encourages individual approaches to painting. Prerequisite: ART 242 to ART 248.

ART 266 - Package Design (3 cr.)
Studies the role of packaging in product identification, presentation, and production. Investigates the unique challenges of typography, illustration and design from 2D to 3D forms. Researches business goals, marketing objectives, packaging structure, and display aesthetics. Applies the principles of design and foundations of typography in final production of products.

ART 281 - Illustration for Designers (3 cr.)
Explores the professional field of illustration, along with the different ways of producing illustrations for editorial, commercial, and technical clients using traditional and digital techniques. Build skills and knowledge through discussions, projects and exercises for positioning as an illustrator.

ART 283 - Computer Graphics I (4 cr.)
Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects which reinforce instruction and are appropriate for portfolio use.

ART 287 - Portfolio and Resume Preparation (3 cr.)
Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval.

ART 295 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

ART 298 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(ASL) American Sign Language

ASL 101-102 - American Sign Language I-II (3 cr. each)
Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, fingerspelling, and grammatical non-manual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Part I and II of II.

ASL 115 - Fingerspelling and Number Use in ASL (2 cr.)
Provides intensive practice in comprehension and production of fingerspelled words and numbers with emphasis on clarity.
and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Prerequisite ASL 101 or permission of instructor.

ASL 125 - History & Culture of the Deaf Community I (3 cr.)
Presents an overview of various aspects of Deaf Culture, including educational and legal issues.

ASL 201-202 - American Sign Language III-IV (3 cr. each)
Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf Community is encouraged to enhance linguistic and cultural knowledge. Part I and II of II.

(AST) Administrative Support Technology

AST 55 - Certification Preparation (1 cr.)
Serves as a review of objectives for a specific Certification. Uses certification test preparation software, when available, in conjunction with a faculty resource person. May be repeated for credit.

AST 101 - Keyboarding I (3 cr.)
Teaches the alphanumeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports and tabulation.

AST 102 - Keyboarding II (3 cr.)
Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. Continues skill-building for speed and accuracy. Prerequisite AST 101.

AST 114 - Keyboarding for Information Processing (2 cr.)
Teaches the alphabetic and numeric keys: develops correct techniques and competency in the use of computer keyboards. May include basic correspondence and report formats. A laboratory co-requisite (AST115) may be required.

AST 117 - Keyboarding for Computer Usage (1 cr.)
Teaches the alphabetic keyboard and 10-key pad. Develops correct keying techniques.

AST 205 - Business Communications (3 cr.)
Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related materials.

AST 234 - Records and Database Management (3 cr.)
Teaches filing and records management procedures using microcomputer database software. Incorporates both manual and electronic methods for managing information. A laboratory co-requisite (AST 235) may be required.

AST 238 - Word Processing Advanced Operations (3 cr.)
Teaches advanced word processing features including working with merge files, macros, and graphics; develops competence in the production of complex documents.

AST 243 - Office Administration I (3 cr.)
Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical-thinking, problem-solving, and job performance skills in a business office environment. Corequisite AST 101.

AST 244 - Office Administration II (3 cr.)
Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Prerequisite AST 243 or equivalent.

(AUT) Automotive

AUT 111 Automotive Engines I (3-4 cr. each)
Presents analysis of power, cylinder condition, valves and bearings in the automotive engine to establish the present condition, repairs or adjustments. Part I of II. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week. 3-4 credits

AUT 112 - Automotive Engines II (3-4 cr. each)
Presents analysis of power, cylinder condition, valves and bearings in the automotive engine to establish the present condition, repairs or adjustments. Part II of II. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week. 3-4 credits

AUT 121 Automotive Fuel Systems I (3-4 cr.)
Analyses major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul and factory adjustment procedures of all major carbureted and fuel injection systems. Part I of II. Lecture 3 hours. Laboratory 0-3 hours. Total 3-6 hours per week. 3-4 credits.

AUT 122 - Automotive Fuel Systems II (3-4 cr. each)
Analyses major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete
AUT 127 - Automotive Lubrication and Cooling Systems (3 cr.)
Analyzes lubrication systems to include lubricants, pumps, lines, filters, and vents. Also analyzes cooling systems, coolants, pumps, fans, lines and connections. Teaches estimating repairs, adjustments needed and their costs. Lecture 2 hour. Laboratory 3 hours. Total 5 hours per week.

AUT 130 - Introduction to Auto Mechanics (3 cr.)
Introduces auto mechanics, covering auto shop safety, tool identification and use. Explains automobile system theory and function. Stresses quality work practices and job opportunities. Lecture 3 hours per week.

AUT 136 - Automotive Vehicle Inspection (2 cr.)
Presents information on methods for performing automotive vehicle safety inspection.

AUT 178 - Automotive Final Drive and Manual Transmission Systems (4 cr.)
Presents the operation, design, construction and repair of manual transmissions and final drive systems, for both front and rear drive vehicles, including clutches, synchronizers, torque multiplication/gear reduction, along with differentials, transmission/transaxles, drive axles, U-joints, CV joints, 4-wheel drive and all-wheel drive systems.

AUT 211-212 - Automotive Systems III-IV (4 cr. each)
Presents advanced theory and detailed study of automobile systems. Provides laboratory periods for actual field practice in troubleshooting. Part I and II of II.

AUT 230 - Introduction to Alternative Fuels and Hybrid Vehicles (3 cr.)
Introduces current trends in alternative fueled vehicles including current alternative fueled vehicles and the implication and safety precautions necessary for working on hybrid vehicles systems.

AUT 236 - Automotive Accessories (2 cr.)
Introduces the principles, design, construction, adjustment, and maintenance of all automotive equipment classed as an accessory which is not studied in other automotive courses.

AUT 241-242 - Automotive Electricity I-II (4 cr. each)
Introduces electricity and magnetism, symbols and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments and gauges and accessories. Part I and II of II.

AUT 251 - Automatic Transmissions I (4 cr.)
Studies several types of automatic transmissions, torque converters, and their principles of operation. Includes adjustment, maintenance, and rebuilding.

AUT 265 - Automotive Braking Systems (3 cr.)
Presents operation, design, construction, repair, and servicing of braking systems. Explains uses of tools and test equipment, evaluation of test results, estimation of repair cost for power, standard and disc brakes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 266 - Auto Alignment, Suspension and Steering (4 cr.)
Introduces use of alignment equipment in diagnosing, adjusting, and repairing front and rear suspensions. Deals with repair and servicing of power and standard steering systems.

(BIO) Biology

BIO 101 - General Biology I (4 cr.)
Focuses on foundations in cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence. Readiness to enroll in ENG 111 plus completion of developmental math unit 3 required or placement in unit 4 or above. This is a Passport Transfer course.

BIO 102 - General Biology II (4 cr.)
Focuses on diversity of life, anatomy and physiology of organisms, and ecosystem organization and processes in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part II of a two-course sequence. Prerequisite is BIO 101.

BIO 107 - Biology of the Environment (4 cr.)
Presents the basic concepts of environmental science through a topical approach. Includes the scientific method, population growth and migration, use of natural resources and waste management, ecosystem simplification recovery, evolution, biogeochemical cycles, photosynthesis and global warming, geological formations, atmosphere and climate,
and ozone depletion and acid deposition.

BIO 141 - Human Anatomy and Physiology I (4 cr.)
Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Part I of II. Lecture 3 hours. Laboratory 2-3 hours. Total 5-6 hours per week. 4 credits

BIO 142 - Human Anatomy and Physiology II (4 cr.)
Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Part II of II. Lecture 3 hours. Laboratory 2-3 hours. Total 5-6 hours per week. 4 credits

BIO 150 - Introductory Microbiology (4 cr.)
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health.

BIO 205 - General Microbiology (4 cr.)
Examines morphology, genetics, physiology, ecology, and control of microorganisms. Emphasizes application of microbiological techniques to selected fields. Prerequisites one year of college biology and one year of college chemistry or divisional approval.

BIO 256 - General Genetics (4 cr.)
Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Prerequisite BIO 101-102 or equivalent.

BIO 270 - General Ecology (4 cr.)
Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Prerequisite BIO 101-102 or divisional approval.

(ABL) Building

BLD 100 - Introduction to Construction (3 cr.)
Covers basic knowledge and requirements needed in the construction trades. Introduces use of tools and equipment, with emphasis on construction safety, including personal and tool safety. Provides a working introduction to basic blueprint reading and fundamentals of construction mathematics.

BLD 101 - Blueprint Reading and the Building Code (3 cr.)
Introduces reading and interpreting various kinds of blueprints and working drawings with reference to local, state, and national building codes.

BLD 103 - Principles of Residential Building Construction Inspection (3 cr.)
Introduces general principles of residential building inspection including materials, foundations, framing, finishing, and building codes. Use local pre/co-requisites.

BLD 105 - Shop Practices and Procedures (2 cr.)
Introduces basic hand and power tools with emphasis on proper care and safety practices. Introduces materials used in building trades including metals, plastics, and woods with stress placed on the processing techniques of each. Emphasizes fasteners such as screws, rivets, and glues as well as brazed, soldered, and welded joints.

BLD 106 - Introduction to Plumbing (2 cr.)
Presents a review of mathematic principles and concepts necessary for typical construction applications. Includes: whole numbers, order of operations, fractions, decimals, weights, measures and conversions, ratio and proportions, percentages, angles and perimeters, volume and surface area solids, board measure, lumber pricing, computations for preparing footing, foundations and slabs, beams and framing roofs systems and stairs. Covers basic estimation and working from construction plans. This course is not intended to satisfy general education requirements. Prerequisite: MTE 2.

BLD 107 - Applied Construction Mathematics (3 cr.)
Presents an introduction to carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Presents an introduction to selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Part I and II of II.

BLD 108 - Carpentry Framing I (2 cr.)
Continues the study of carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Continues the study of selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Part I and II of II.
BLD 146 - Form Work and Concrete Theory (3 cr.)
Introduces the proper terminology and jargon of form construction, the installation of reinforcement material, and the make-up and placement of concrete. Prerequisite: BLD 126.

BLD 147 - Principles of Block and Bricklaying (3 cr.)
Presents fundamentals of masonry practices. Includes foundations, block laying skills, mortar mixing, measuring, and introduction to bricklaying techniques. Emphasizes hands-on applications of block and brick techniques.

BLD 181 - Introduction to Concrete Construction (3 cr.)
Introduces basic form building, special floor systems, and tilt-up wall systems.

BLD 184 - Interior and Exterior Finishes (3 cr.)
Introduces the student to interior wall framing with wood and/or metal studs, layout of walls, and the steps required to successfully complete interior framing. Also covers the steps used for exterior finishes, such as siding, cornice work, and gutters.

BLD 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

BUS 100 - Introduction to Business (3 cr.)

BUS 108 - Business Etiquette (1 cr.)
Presents basic etiquette for individuals desiring to succeed in a business environment. Topics include manners, business attire, networking, socializing, and meeting protocol. Includes tips on how to handle basic issues associated with diversity, plurality, and cultural and family values. Discusses how contemporary displays of personal expressions may impact business relationships.

BUS 121 - Business Mathematics I (3 cr.)
Applies mathematical operations to business processes and problems. Reviews operations, equations, percents, sales and property taxes, insurance, checkbook and cash records, wage and payroll computations, depreciation, overhead, inventory turnover and valuation, financial statements, ratio analysis, commercial discounts, markup, and markdown.

BUS 122 - Business Mathematics II (3 cr.)
Applies mathematical operations to business processes and problems. Reviews basic statistics, distribution of profit and loss in partnerships, distribution of corporate dividends, simple interest, present value, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds, and amortization.

BUS 134 - Manufacturing Economics (1 cr.)
Presents concepts of manufacturing economics and industrial accounting. Covers the major economic topics that pertain to precision machining manufacturing such as product costing, fixed/variable cost, allocation methods, and working capital management. Explains the impact of cash, inventory, and relative range.

BUS 147 - Introduction to Business Information Systems (3 cr.)
Provides an overview of business information systems. Introduces computer hardware, software, procedures, systems, and human resources, and explores their integration and application in business. Discusses fundamentals and applications of computer problem-solving and programming.

BUS 149 - Workplace Ethics (1 cr.)
Provides a broad overview of ethics in the modern day business world including workforce skill building and self-awareness through group discussions. Discusses workplace topics such as diversity, substance abuse, hiring and firing and workplace practices, appropriate dress, communication, business ethics, and interviewing.

BUS 165 - Small Business Management (3 cr.)
Identifies management concerns unique to small businesses. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses.

BUS 199 - Supervised Study (1-3 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

BUS 200 - Principles of Management (3 cr.)
Teaches management and the management functions of planning, organizing, leading, and controlling. Focuses on application of management principles to realistic
situations managers encounter as they attempt to achieve organizational objectives.

BUS 204 - Project Management (3 cr.)
Provides students with knowledge of essential skills and techniques necessary to lead or participate in projects assigned to managerial personnel. Covers time and task scheduling, resource management, problem solving strategies and other areas related to managing a project.

BUS 205 - Human Resource Management (3 cr.)
Introduces employment, selection, and placement of personnel, forecasting, job analysis, job descriptions, training methods and programs, employee evaluation systems, compensation, benefits, and labor relations.

BUS 206 - Advanced Project Management (4 cr.)
Provides students with in-depth knowledge and advanced skills and techniques necessary to lead projects assigned to project managers. Covers project initiating, project planning, project executing, project monitoring and controlling, and project closing.

BUS 209 - Continuous Quality Improvement (3 cr.)
Presents the different philosophies in Quality Control. Introduces students to Process Improvement, Team Development, Consensus Building, and Problem-Solving strategies. Identifies methods for Process Improvement in manufacturing and service organizations which includes Statistical Process Control when used in the quality control function of business and industry.

BUS 220 - Introduction to Business Statistics (3 cr.)
Introduces statistics as a tool in decision-making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index numbers, probability theory, and time series analysis.

BUS 221 - Business Statistics I (3 cr.)
Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution and hypotheses for means and proportions. Prerequisite MTH 161 or division approval.

BUS 223 - Distribution and Transportation (3 cr.)
Examines the background and history of transportation, emphasizing the fundamental role and importance the industry plays in companies, society, and the environment in which transportation service is provided. Provides an overview of carrier operations, management, technology, and strategies including transportation regulations and public policy.

BUS 227 – Business Analytics (3 cr.)
Includes overview of quantitative methods in business decision-making, simple and multiple regression and correlation analysis, time series analysis and business forecasting, decision analysis, linear programming, transportation and assignment methods, and network models. May include computer applications. Prerequisite MTH 161 or division approval.

BUS 235 - Business Letter Writing (3 cr.)
Applies composition principles to business correspondence, employment documents, and reports (including presentation of data in various chart formats). Focuses on preparing effective communications with customers, suppliers, employees, the public, and other business contacts. Prerequisites: AST 102, ENG 111. Corequisite: ENG 112

BUS 236 - Communication in Management (3 cr.)
Introduces the functions of communication in management with emphasis on gathering, organizing, and transmitting facts and ideas. Teaches the basic techniques of effective oral and written communication.

BUS 240 - Introduction to Business Law (3 cr.)
Presents an introduction to the American legal system, including an overview of the courts, civil and criminal law. Develops an in-depth understanding of contracts, agency law, and business organizations. Also includes an overview of property, UCC Sales, and Commercial Paper.

BUS 255 - Inventory and Warehouse Management (3 cr.)
Emphasizes the relationships of inventory and warehouse management to customer service and profitability of the wholesale distributor. Focuses on the role of computerized systems and resulting information for effective management of inventory and the warehouse under various conditions.

BUS 295 - Topics in (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

BUS 297 - Cooperative Education (1-6 cr.)
Supervises in on-the-job training for pay in approved business, industrial and service firms, coordinated by the college's cooperative education office. Is applicable to all occupational-technical curricula at the discretion of the college. Credit/Work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

BUS 298 - Seminar and Project (3 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

BUS 299 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.
(CAD) Computer Aided Drafting and Design

CAD 116 - Drafting III (3 cr.)
Teaches auxiliaries, basic concepts, terms of reference, choice of views, axis, proportioning distances and perspective drawings. (Credit will not be awarded for both CAD 116 and DRF 116.)

CAD 120 - Introduction to Graphic Representation (3 cr.)
Teaches use of instruments, lettering, sketching, and drawing conventions. Emphasizes legible drawings and the value of presentation. (Credit will not be awarded for both CAD 120 and DRF 120.)

CAD 199 - Supervised Study In (discipline) (1-5 cr.)
Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline. Variable hours per week.

CAD 201 - Computer Aided Drafting and Design I (3 cr.)
Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. (Credit will not be awarded for both CAD 201 and DRF 201.)

CAD 202 - Computer Aided Drafting and Design II (3 cr.)
Teaches production drawings and advanced operations in computer-aided drafting. (Credit will not be awarded for both CAD 202 and DRF 202.)

CAD 210 - Advanced Technical Drafting (4 cr.)
Presents intersections of plane surfaces, lines and planes, skew lines and surfaces. Covers intersections of prisms, pyramids and other shapes, developments, sheet metal drafting, screw threads and fasteners, and keys and springs. (Credit will not be awarded for both CAD 210 and DRF 210.)

CAD 231 – Computer Aided Drafting I (3 cr.)
Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components and operate a typical CAD system. (Credit will not be awarded for both CAD 231 and DRF 231)

CAD 233 - Computer Aided Drafting III (3 cr.)
Exposes students to 3-D and modeling. Focuses on proficiency in Production drawing using a CAD system. (Credit will not be awarded for both CAD 233 and DRF 233)

CAD 298 - Seminar and Project in (discipline) (2 cr.)
Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field.

(CHD) Childhood Development

CHD 118 - Language Arts for Young Children (3 cr.)
Emphasizes the early development of children's language and literacy skills. Presents techniques and methods for supporting all aspects of early literacy. Surveys children's literature, and examines elements of promoting oral literacy, print awareness, phonological awareness, alphabetic principle, quality storytelling and story reading. Addresses strategies for intervention and support for exceptional children and English Language Learners.

CHD 120 - Introduction to Early Childhood Education (3 cr.)
Introduces early childhood development through activities and experiences in early childhood, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures.

CHD 145 - Teaching Art, Music, and Movement to Children (3 cr.)
Focuses on children's exploration, play, and creative expression in the areas of art, music, and movement. Emphasis will be on developing strategies for using various open-ended media representing a range of approaches in creative thinking. Addresses strategies for intervention and support for exceptional children and English Language Learners.

CHD 146 - Math, Science, and Social Studies for Children (3 cr.)
Provides experiences in content, methods, and materials for the development of math, science, and social studies skills in children. Emphasis will be on developing strategies for using various resources to facilitate children's construction of knowledge. Addresses strategies for intervention and support for children with special needs and English Language Learners.

CHD 165 - Observation and Participation in Early Childhood/Primary Settings (3 cr.)
Focuses on observation as the primary method for gathering information about children in early childhood settings. Emphasizes development of skills in the implementation of a range of observation techniques. May be taken again for credit.

CHD 166 - Infant and Toddler Programs (3 cr.)
Examines child growth and development from birth to 36 months. Focuses on development in the physical, cognitive, social, emotional, and language domains. Emphasizes the importance of the environment and relationships for healthy brain development during the child's first three years of life. Investigates regulatory standards for infant/toddler care giving.

CHD 205 - Guiding the Behavior of Children (3 cr.)
Explores the role of the early childhood educator in supporting emotional and social development of children, and in fostering a sense of community. Presents practical strategies for encouraging prosocial behavior, conflict resolution and problem solving. Emphasizes basic skills and techniques in child guidance.
CHD 210 - Introduction to Exceptional Children (3 cr.)
Reviews the history of and legal requirements for providing intervention and educational services for young children with special needs. Studies the characteristics of children with a diverse array of needs and developmental abilities. Explores concepts of early intervention, inclusion, guiding behavior and adapting environments to meet children's needs.

CHD 216 - Early Childhood Programs, School, and Social Change (3 cr.)
Explores methods of developing positive, effective relations with families to enhance their developmental goals for children. Considers culture and other diverse needs, perspectives, and abilities of families and educators. Emphasizes advocacy and public policy awareness as an important role of early childhood educators. Describes risk factors and identifies community resources.

CHD 265 - Advanced Observation and Participation in Early Childhood/Primary Settings (3 cr.)

CHD 270 - Administration of Childcare Programs (3 cr.)
Examines the skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting, and developing forms for recordkeeping.

(CHM) Chemistry

CHM 101-102 - Introductory Chemistry I-II (4 cr. each)
Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Designed for the non-science major. Part I and II of II. This is a Passport Transfer course.
CHM 111-112 - General Chemistry I-II (4 cr. each)
Explores the fundamental laws, theories, and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Part I and II of II. This is a Passport Transfer course.

CHM 241 - Organic Chemistry I (3 cr.)
Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Part I of II.

CHM 242 - Organic Chemistry II (3 cr.)
Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Part II of II.

CHM 243 - Organic Chemistry Laboratory I (1 cr.)
Is taken concurrently with CHM 241 and CHM 242. Part I of II.

CHM 244 - Organic Chemistry Laboratory II (1 cr.)
Is taken concurrently with CHM 241 and CHM 242. Part II of II.

(CIV) Civil Engineering Technology

CIV 171 - Surveying I (3 cr.)
Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Prerequisite: Engineering Technical Math or divisional approval.

(COS) Cosmetology

COS 81 - Cosmetology Theory I (4 cr.)
Covers bacteriology, finger waving, sterilization and sanitation, wet hair styling, draping, shampooing and rinsing, permanent waving, haircutting, and properties of the scalp and hair.

COS 82 - Cosmetology Theory II (5 cr.)
Covers hair coloring, theory of massage, the salon business, chemical hair relaxing and soft curl permanent, facial and facial make-up, hair pressing, skin and its disorders, artistry and artificial nails, cells, anatomy and physiology, manicuring and pedicure, electricity and light therapy, nail and its disorders, chemistry and the State Board Review. Prerequisite: COS 81 or permission of the instructor.

COS 195 Cosmetology Theory IV (3 Cr)
Provides an opportunity to explore topical areas of interest to or needed by students. This course is a continuation of Theory II.

COS 198 - Seminar and Project (3 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit.

COS 199
COS 199 Supervised Study (5 Cr)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. This course provides experience in a salon setting (classroom/lab).

COS 295 Cosmetology Theory V (3 Cr)
Provides an opportunity to explore topical areas of interest to or needed by students. This course is a continuation of Theory II.
COS 298 Seminar and Project II (3 Cr)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field.

COS 299 Supervised Study in Cosmetology II (4 Cr) Assigns problems for independent study incorporating previous instruction and supervised by the instructor. This course provides experience in a salon setting (classroom/lab).

**CSC** Computer Science

CSC 200 - Introduction to Computer Science (4 cr.)
Provides broad introduction to computer science. Discusses architecture and function of computer hardware, including networks and operating systems, data and instruction representation and data organization. Covers software, algorithms, programming languages and software engineering. Discusses artificial intelligence and theory of computation. Includes a hand-on component.

CSC 201 - Computer Science I (4 cr.)
Introduces algorithm and problem solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Corequisite: MTH 263 or equivalent or divisional approval.

CSC 202 - Computer Science II (4 cr.)
Examines data structures and algorithm analysis. Covers data structures (including sets, strings, stacks, queues, arrays, records, files, linked lists, and trees), abstract data types, algorithm analysis (including searching and sorting methods), and file structures. Prerequisite: CSC 201. Corequisite: MTH 264.

CSC 205 - Computer Organization (4 cr.)
Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization. Uses a simple assembler language to complete programming projects. Includes processors, instruction, execution, addressing techniques, data representation and digital logic.

**CST** Communications Studies and Theatre

CST 100 - Principles of Public Speaking (3 cr.)
Applies theory and principles of public address with emphasis on preparation and delivery.

CST 110 - Introduction to Communication (3 cr.)
Examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level.

CST 126 - Interpersonal Communication (3 cr.)
Teaches interpersonal communication skills for both daily living and the world of work. Includes perception, self-concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness and other interpersonal skills.

CST 130 - Introduction to the Theatre (3 cr.)
Surveys the principles of drama, the development of theatre production, and selected plays to acquaint the student with various types of theatrical presentations.

CST 131 - Acting I (3 cr.)
Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Part I of II.

CST 132 - Acting II (3 cr.)
Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Part II of II.

CST 136 - Theatre/Musical Workshop (1-6 cr.)
Enables students to work in various activities of a play production or a musical production including performance, orchestra, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. May be repeated for credit. Variable hours per week. This course is cross-listed with MUS 129. Credit will not be awarded for both. Variable hours per week.

CST 151 - Film Appreciation I (3 cr.)
Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural and historical influences of films and their contexts. Part I of II.

CST 152 - Film Appreciation II (3 cr.)
Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural and historical influences of films and their contexts. Part II of II.

CST 231 - History of Theatre I (3 cr.)
Analyzes and studies theatre history to include architecture, performers and performance, playwrights, stage, production methods, and audience from the Greeks through modern drama. Part I of II.

**DNA** Dental Assisting

DNA 100 - Introduction to Oral Health Professions (1 cr.)
Provides an introduction to the oral health profession and covers basic terminology, historical perspective, the credentialing process, accreditation, professional organizations, and legal and ethical considerations.
DNA 103 - Introduction to Oral Health (1 cr.)
Teaches anatomy of the head and neck, the oral cavity hard and soft tissues, as well as tooth morphology. Includes dental terminology, deciduous and permanent dentition as well as pathology.

DNA 109 - Practical Infection Control (3 cr.)
Studies principles of management of disease producing micro-organisms and diseases associated. Emphasis is placed on sterilization, asepsis, and disinfection techniques applicable in the dental office.

DNA 110 - Dental Materials (3 cr.)
Studies the materials utilized in the laboratory aspect of dentistry as support in treatment. Emphasis is placed on the characteristics, manipulation, economical control, storage, and delivery of materials.

DNA 113 - Chairs Assisting I (3 cr.)
Provides instruction on the principles of clinical chair side dental assisting, dental equipment use and maintenance, safety, instrument identification, tray set-ups by procedures, and patient data collection. Emphasis on patient management during restorative procedures.

DNA 134 - Dental Radiology and Practicum (3 cr.)
Teaches the physics of dental radiation and safety, equipment operation, cone placement for the parallel and bisection techniques, panoramic exposures, mounting and film processing.

DNA 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(DNH) Dental Hygiene

DNH 111 - Oral Anatomy (2 cr.)
Studies the morphology and function of the oral structures with emphasis on the primary and permanent dentition, eruption sequence, occlusion, and intra-arch relationships.

DNH 115 - Histology/Head and Neck Anatomy (3 cr.)
Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck, and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium.

DNH 120 - Management of Emergencies (2 cr.)
Studies the various medical emergencies and techniques for managing emergencies in the dental setting. Additional practical applications and simulations of emergencies maybe conducted to enhance basic knowledge from the one hour lecture component.

DNH 130 - Oral Radiography for the Dental Hygienist (3 cr.)
Studies radiation physics, biology, safety, and exposure techniques for intra- and extra-oral radiographic surveys. Laboratory provides practice in exposure, processing methods, mounting, and interpretation of normal findings.

DNH 141 - Dental Hygiene I (5 cr.)
Introduces clinical knowledge and skills for the performance of dental hygiene services; basic skill components, lab manikins and client practice.

DNH 142 - Dental Hygiene II (5 cr.)
Exposes students to instrument sharpening, time management, and client education techniques and methods. Provides supervised clinical practice in the dental hygiene clinic with emphasis on developing client treatment and instrument skills. Prerequisite DNH 141.

DNH 143 - Dental Hygiene III (3 cr.)
Introduces dental health care for clients with special needs. Includes introduction to computer concepts and applications. Provides supervised clinical practice in the dental hygiene clinic with emphasis on refining client treatment and instrumentation skills, including oral radiographs.

DNH 145 - General and Oral Pathology (2 cr.)
Introduces general pathology with consideration of the common diseases affecting the human body. Particular emphasis is given to the study of pathological conditions of the mouth, teeth and their supporting structures. Prerequisite: DNH 113, 114 or 115.

DNH 146 - Periodontics for the Dental Hygienist (2 cr.)
Introduces the theoretical and practical study of various concepts and methods used in describing, preventing, and controlling periodontal disease. Presents etiology, microbiology, diagnosis, treatment and prognosis of diseases.

DNH 150 - Nutrition (2 cr.)
Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene.

DNH 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

DNH 214 - Practical Materials for Dental Hygiene (2 cr.)
Studies the current technologic advances, expanded functions, and clinical/laboratory materials used in dental hygiene practice. Provides laboratory experience for developing skills in the utilization and applications of these technologies and functions.

DNH 216 - Pharmacology (2 cr.)
Studies the chemical and therapeutic agents used in dentistry, including their preparation, effectiveness, and specific application.
DNH 226 - Public Health Dental Hygiene I (2 cr.)
Studies and compares concepts of delivery of health care, applying the public health delivery model. Utilizes epidemiologic methods, research and biostatistics as applied to oral health program planning, implementation, and evaluation. Incorporates and applies current health issues and trends.

DNH 227 - Public Health Dental Hygiene II (1 cr.)
Applies concepts of public health program planning through student directed community projects with an emphasis on preventative oral health education. Includes development of table clinics, bulletin boards, and volunteer service in the community. Prerequisite: DNH 226.

DNH 230 - Office Practice and Ethics (1 cr.)
Studies the principles of dental ethics and economics as they relate to the dental hygienist. The course also includes a study of jurisprudence and office procedures.

DNH 235 - Management of Dental Pain and Anxiety in the Dental Office (2 cr.)
Provides a study of anxiety and pain management techniques used in dental care. Students will understand the necessary theory to appropriately treat, plan and successfully administer topical anesthesia, local anesthesia, and nitrous oxide/oxygen analgesia. Includes the components of pain, pain control mechanisms, topical anesthesia, local anesthesia and nitrous oxide/oxygen analgesia. Prerequisites: DNH 115, DNH 120 and DNH 216.

DNH 244 - Dental Hygiene IV (5 cr.)
Introduces advanced skills and the dental hygienist’s role in dental specialties. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasizes treatment of clients demonstrating periodontal involvement, stressing application and correlation of knowledge and skills from previous semesters. Prerequisite DNH 143 or DNH 190.

DNH 245 - Dental Hygiene V (5 cr.)
Exposes student to current advances in dentistry. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasis is placed on synthesis of knowledge from previous semesters, treatment of clients with moderate to advanced periodontal involvement and improving clinical speed while maintaining quality in preparation for practice. Prerequisite: DNH 244.

(DRF) Drafting
(see also CAD Computer-Aided Draffting)

DRF 114-115 - Drafting I-II (3 cr. each)
Teaches geometric construction, orthographic projection, sections and conventions, pictorial drawings, isometric principles, oblique drawing, and dimensioning. Part I and II of II.

DRF 160 - Machine Blueprint Reading (3 cr.)
Introduces interpreting of various blueprints and working drawings. Applies basic principles and techniques such as visualization of an object, orthographic projection, technical sketching and drafting terminology. Requires outside preparation.

DRF 175 – Schematics and Mechanical Diagrams (2 cr.)
Covers interpretation of basic shop drawings, conventional symbols, common electrical and electronics symbols, wiring diagrams, hydraulic and pneumatic symbols, schematic drawings, and piping diagrams.

(ECO) Economics

ECO 100 - Elementary Economics (3 cr.)
Introduces students to the most basic elements of economics without detailed study of theory. Presents and interprets current issues and concerns publicized in the media. Allows students to understand and grasp the importance of local, state, and national issues with economic themes and overtones.

ECO 120 - Survey of Economics (3 cr.)
Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts.

ECO 201 - Principles of Macroeconomics (3 cr.)
Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and investments. This is a Passport Transfer course.

ECO 202 - Principles of Microeconomics (3 cr.)
Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits, and production and distribution.

(EDU) Education

EDU 200 - Introduction to Teaching as a Profession (3 cr.)
Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes supervised field placement (recommended: 40 clock hours) in a K-12 school. Prerequisite: Successful completion of 24 credits of transfer courses.
EDU 235 - Health, Safety, and Nutrition Education (3 cr.)
Focuses on the health and developmental needs of children and
the methods by which these needs are met. Emphasizes
positive health, hygiene, nutrition and feeding routines,
childhood diseases, and safety issues. Emphasizes
supporting the mental and physical wellbeing of children, as
well as procedures for reporting child abuse.

(EGR) Engineering

EGR 115 - Engineering Graphics (2 cr.)
Applies principles of orthographic projection, and multi-
view drawings. Teaches descriptive geometry including
relationships of points, lines, planes and solids. Introduces
sectioning, dimensioning and computer graphic techniques.
Includes instruction in Computer Aided Drafting.

EGR 120 - Introduction to Engineering (2 cr.)
Introduces the engineering profession, professional
concepts, ethics, and responsibility. Reviews hand
calculators, number systems, and unit conversions.
Introduces the personal computer and operating systems.
Includes engineering problem solving techniques using
computer software. Corequisite: MTH 161 or MTH 167 or
MTH 261

EGR 126 - Computer Programming for Engineers (3 cr.)
Introduces computers, their architecture and software.
Teaches program development using flowcharts. Solves
engineering problems involving programming in languages
such as FORTRAN, PASCAL, or C++. Corequisite: MTH 161
or MTH 167 or MTH 261

EGR 140 - Engineering Mechanics - Statics (3 cr.)
Introduces mechanics of vector forces and space, scalar
mass and time, including S.I. and U.S. customary units.
Teaches equilibrium, free-body diagrams, moments,
couples, distributed forces, centroids, moments of inertia
analysis of two- force and multi-force members and friction
and internal forces. Prerequisites: MTH 264, PHY 241

EGR 245 - Engineering Mechanics - Dynamics (3 cr.)
Presents approach to kinematics of particles in linear and
curvilinear motion. Includes kinematics of rigid bodies in
plane motion. Teaches Newton's second law, work-energy
and power, impulse and momentum, and problem solving
using computers. Prerequisite: EGR 140

EGR 246 - Mechanics of Materials (3 cr.)
Teaches concepts of stress, strain, deformation, internal
equilibrium, and basic properties of engineering materials.
Analyzes axial loads, torsion, bending, shear and combined
loading. Studies stress transformation and principle stresses,
column analysis and energy principles. Prerequisite: EGR
140

EGR 248 - Thermodynamics for Engineering (3 cr.)
Studies formulation of the first and second law of
thermodynamics. Presents energy conversion, concepts
of energy, temperature, entropy, and enthalpy, equations
of state of fluids. Covers reversibility and irreversibility in
processes, closed and open systems, cyclical processes and
problem solving using computers. Prerequisites: MTH
264, PHY 241

(ELE) Electrical Technology

ELE 110 - Home Electric Power (3 cr.)
Covers the fundamentals of residential power distribution,
circuits, panels, fuse boxes, breakers, transformers.
Includes study of the national electrical code, purpose and
interpretation.

ELE 113-114 - Electricity I-II (3 cr. each)
Teaches principles of electricity covering fundamentals,
devices and components in both DC and AC
circuits. Part I and II of II.

ELE 115 - Basic Electricity (3 cr.)
Covers basic circuits and theory of fundamental concepts
of electricity. Presents a practical approach to discussion of
components and devices.

ELE 123-124 - Electrical Applications I-II (2 cr. each)
Provides laboratory and shop assignments/jobs as applied
to fundamental principles of electricity with emphasis on
measurements and evaluation of electrical components,
devices and circuits. Part I and II of II.

ELE 131-132 - National Electrical Code I-II (3 cr. each)
Provides comprehensive study of the purpose and
interpretations of the National Electric Code as well as
familiarization and implementation of various charts,
code rulings and wiring methods including state and local
regulations. Part I and II of II.

ELE 133-134 - Practical Electricity I-II (3 cr. each)
Teaches the fundamentals of electricity, terminology,
symbols, and diagrams. Includes the principles essential
to the understanding of general practices, safety and the
practical aspects of residential and non- residential wiring
and electrical installation, including fundamentals of motors
and controls. Pre/Corequisite MTH 02 or equivalent. Part I
and II of II.

ELE 143 - Programmable Controllers I (4 cr.)
Studies operating characteristics, programming techniques,
interfacing, and networking capabilities of programmable
logic controllers. Studies controllers with analog and/or
digital interfacing, hand-held and/or software programming.
Prerequisites: ETR 156, ELE 158, or equivalent. Part I of II.

ELE 145 – Transformer Connections and Circuits (2 cr.)
Studies transformer theory, symbols, diagrams, connections,
terminology and troubleshooting techniques.
Prerequisite: ELE 150 or equivalent.
ELE 147 - Electrical Power and Control Systems (3 cr.)
Reviews basic DC and AC circuits. Covers single-phase and three-phase AC power distribution systems, and protection devices, including types of AC motors. Presents analyzing and troubleshooting electrical control systems and motor protection devices. Prerequisite ELE 134 or equivalent.

ELE 148 – Power Distribution Systems (3 cr)
Introduces transmission and distribution of electrical power. Includes application of transformers, distribution and over-current protection devices, substations, switchboards, feeders, bus-ways, motor control centers, generators, motors, and troubleshooting techniques associated with these systems and devices.

ELE 152 - Electrical-Electronic Calculations I (3 cr.)
Includes general math, scale readings, conversions between units of measure and algebra with exponents and radicals as it applies to DC circuits. [First of a three-sequence course].

ELE 153 - Electrical-Electronic Calculations II (3 cr.)
Includes a review of DC applications, angular measurements, right triangle ratios, vector and vector algebra as it applies to AC circuits. [Second of a three-sequence course]. Prerequisite: ELE 152.

ELE 154 - Electrical-Electronic Calculations III (3 cr.)
Includes a review of DC and AC applications and includes experimental equations and logarithms as it applies to electrical-electronic circuits. [Third of a three-course sequence]. Prerequisite: ELE 153.

ELE 156 - Electrical Control Systems (3 cr.)
Includes troubleshooting and servicing electrical controls, electric motors, motor controls, motor starters, relays, overloads, instruments and control circuits.

ELE 158 - Surface Mount Soldering (1 cr.)
Emphasizes high reliability soldering concepts and soldering standards as applied to surface mount soldering and rework, covering identification, installation and removal of components, using various equipment including hot air and soldering iron. Provides an introduction to IPC-A-610 soldering standards.

ELE 159 – Electrical Motors ((3 cr.)
Teaches practical applications and fundamentals of A.C. and D.C. machines. Includes the concepts of magnetism and generators used in electrical motor applications.

ELE 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

ELE 195 – Topics in Battery Maintenance (2 cr.)
Studies Battery theory, symbols, diagrams, connections, terminology and troubleshooting techniques. Provides recommended maintenance, test schedules, and testing procedures that can be used to optimize the life and performance of permanently-installed, vented lead-acid storage batteries used for standby power applications. IEEE 450

ELE 199 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

ELE 216 - Industrial Electricity (3 cr.)
Studies rotating devices, single phase and polyphase distribution, magnetic devices, circuits and systems for industrial applications.

ELE 217 - Electric Power Utilities (2 cr.)
Provides an introduction to the electric power utilities field. Examines the generation, transmission and distribution of electrical energy.

ELE 233 - Programmable Logic Controller Systems I (3 cr.)
Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to system. Prerequisite: ETR 156 and ETR 211 or equivalent. Part I of II.

ELE 234 – Programmable Logic Controller Systems II (3 cr.)
Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to systems. Prerequisite: ETR 156 and ETR 211 or equivalent. Part II of II.

ELE 237 - Human Machine Interface Systems (2 cr.)
Introduces operation of human machine interface devices (HMI), hardware configuration, software programming and programmable logic controller network configuration of HMI devices. Offers troubleshooting practices concerning HMI devices used in industrial machine applications. Prerequisite: ELE 233 or equivalent.

ELE 239 - Programmable Controllers (3 cr.)
Examines installation, programming, interfacing, and concepts of troubleshooting programmable controllers.

ELE 240 - Advanced Programmable Logic Controllers (3 cr.)
Advances further study of Programmable Logic Controllers that was initiated in ELE 239. Students will learn to use more advanced program instructions, including data manipulation, sequences and program control, and advanced PLC features, including timers, counters. Covers connectivity and use of a variety of real world I/O devices. Prerequisite: ELE 239.

ELE 248 - Microcontroller Interfacing and Programming (3 cr.)
Explores issues and concerns related to the programming and interfacing of microcontrollers.
EMS 100 - CPR for Healthcare Providers (1 cr.)
Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for Healthcare Providers. Equivalent to HLT 105.

EMS 112 - Emergency Medical Technician - Basic I (4 cr.)
Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Focuses on all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic.

EMS 113 - Emergency Medical Technician- Basic II (3 cr.)
Continues preparation of student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic.

EMS 120 - Emergency Medical Technician - Basic Clinical (1 cr.)
Observes in a program approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113.

EMS 151 - Introduction to Advanced Life Support (4 cr.)
Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Co-requisite: EMS 170.

EMS 153 - Basic ECG Recognition (2 cr.)
Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmia determination and introduction to 12 lead ECG.

EMS 155 - ALS-Medical Care (4 cr.)
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis and management of multiple medical complaints. Includes, but are not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Prerequisites: Current EMT-B certification, EMS 151 and EMS 153.

EMS 157 - ALS-Trauma Care (3 cr.)
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Prerequisites: Current EMT-B certification and EMS 151.

EMS 159 - ALS-Special Populations (2 cr.)
Continues the Virginia office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, pediatric, and neonates. Prereqs: EMS 151 and EMS 153; Pre or Co-reqs EMS 155. 3 credits.

EMS 170 - ALS Internship I (1 cr.)
Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, Trauma centers and various advanced life support units.

EMS 172 - ALS Clinical Internship II (2 cr.)
Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room and Trauma Centers. Co-req: EMS 151.

EMS 173 - ALS Field Internship II (1 cr.)
Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units.

EMS 213 - ALS Skills Development (1 cr.)
Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory 2-4 hours per week. 1-2 credits.

(ENE) Energy Technology

ENE - 100 Conventional and Alternate Energy Applications (4 cr.)
Provides an overview of hydroelectric, coal, and nuclear energy production methods and renewable solar, geothermal, wind, and fuel cell technology. A complete system breakdown of conventional power production methods, efficiency, and sustainability when compared with solar. Prerequisite: ELE 176 or instructor approval.
ENF 1 - Preparing for College English I (8 cr.)
Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Qualifying placement test score.

ENF 2 - Preparing for College English II (4 cr.)
Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Qualifying placement test score.

ENF 3 - Preparing for College English III (2 cr.)
Provides integrated reading and writing instruction for students who require minimal preparation for college-level English but still need some preparation to succeed. Students in this course will be co-enrolled in college-level English. Students will place into this course based on placement test score. Credit is not applicable toward graduation. Qualifying placement score. Co-Enrollment in a college-level English course.

(ENG) English

ENG 111* - College Composition 1 (3 cr.)
Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics: develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. This is a Passport Transfer course. Lecture 3 hours per week. 3 credits. *Passport Course: The Passport consists of 16 credit hours in which all courses are transferable and shall satisfy general education requirements at public four-year colleges and universities in Virginia, including many private institutions. Passport courses may satisfy a general education requirement without having a specific course equivalent at the receiving institution.

ENG 112 - College Composition II (3 cr.)
Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Prerequisite: Students must successfully complete ENG 111 or its equivalent, and must be able to use word processing software.

ENG 115 - Technical Writing (3 cr.)
Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected reading.

ENG 123 - Writing for the World Wide Web (3 cr.)
Teaches students how to outline, compose, organize, and edit written materials for publication on the World Wide Web. Teaches students how to design basic web pages, compose
website content, design web site layout and develop website navigation for a variety of possible audiences. Prerequisite: ENG 111 or approval.

ENG 131 - Technical Report Writing I (3 cr.)
Offers a review of organizational skills including paragraph writing and basic forms of technical communications, various forms of business correspondence, and basic procedures for research writing. Includes instruction and practice in oral communication skills.

ENG 134 - Grammar for Writing and Speaking (3 cr.)
Studies the various parts of speech with application to both writing and speaking. Includes significant assignments to demonstrate skills in a variety of written and verbal communication, and emphasizes the skills necessary for correct everyday usage of the English language.

ENG 135 - Applied Grammar (3 cr.)
Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling, and mechanics. Prerequisite ENG 134 or divisional approval.

ENG 210 - Advanced Composition (3 cr.)
Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite ENG 112 or divisional approval.

ENG 211 - Creative Writing I (3 cr.)
Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Prerequisite ENG 112 or divisional approval. Part I of II.

ENG 212 - Creative Writing II (3 cr.)
Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Prerequisite ENG 112 or divisional approval. Part II of II.

ENG 241, ENG 242 - Survey of American Literature I-II (3 cr. each)
Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part I and II of II.

ENG 243, ENG 244 - Survey of English Literature I-II (3 cr. each)
Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part I and II of II.

ENG 250 - Children's Literature (3 cr.)
Surveys the history, development and genres of children's literature, focusing on analysis of texts for literary qualities and in terms of audience. Prerequisite(s): ENG 112 or 125 (or divisional approval).

ENG 251 - Survey of World Literature I (3 cr.)
Examines major works of world literature. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part I of II.

ENG 252 - Survey of World Literature II (3 cr.)
Examines major works of world literature. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part II of II.

ENG 253 - Survey of African-American Literature I (3 cr.)
Examines selected works by Black American writers from the colonial period to the present. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part I of II.

ENG 254 - Survey of African-American Literature II (3 cr.)
Examines selected works by Black American writers from the colonial period to the present. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Part II of II.

ENG 256 - Literature of Science Fiction (3 cr.)
Examines the literary and social aspects of science fiction, emphasizing development of ideas and techniques through the history of the genre. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval.

ENG 268 - The Modern Drama (3 cr.)
Studies the modern drama. Emphasizes the understanding and enjoyment of dramatic literature. Requires critical reading and writing. Prerequisite ENG 112 or divisional approval.

(ENV) Environmental Science

ENV 170 - Fundamentals of Energy Technology (2 cr.)
Gives the student an overview of the field of energy conservation and use and provides descriptions of job functions typical to energy technicians.

(ETR) Electronics Technology

ETR 115 - D.C. and A.C. Circuits (3 cr.)
Studies current flow in direct and alternating current circuits with emphasis upon practical problems. Reviews mathematics used in circuit calculations. Introduces concepts of resistance, capacitance, inductance and magnetism. Focuses on electronics/circuits application.

ETR 123-124 - Electronic Applications I-II (2 cr. each)
Provides laboratory and shop experience as applied to basic electronic devices, circuits and systems with emphasis on practical measurements. Part I and II of II.
ETR 136 - General Industrial Electronic Systems (3 cr.)  
Studies devices, circuits, power modules, analog and digital, open and closed loop control and servo systems. May include laboratory projects and modular troubleshooting.

ETR 141-142 - Electronics I-II (3 cr. each)  
Introduces electronic devices as applied to basic electronic circuits and systems. Part I and II of II.

ETR 144 – Devices and Applications II ((3-4 cr.)  
Teaches theory of active devices and circuits such as diodes, power supplies, transistors (BJTs), amplifiers and their parameters, FETs, and operational amplifiers. May include UJTs, oscillators, RF amplifiers, thermionic devices and others. Corequisite: knowledge of D.C./A.C. theory or permission of instructor. Part II of II.

ETR 149 - PC Repair (3 cr.)  
Teaches the maintenance, troubleshooting and repair of personal computer systems. Uses IBM or compatible computer systems to provide fault isolation drill and practice.

ETR 150 - Machine Control Using Relay & Programmable Logic (3 cr.)  
Provides an introduction to hardwired relay logic and the programmable logic controller (PLC) as utilized in a variety of different control tasks. Covers different types of inputs and outputs in control system. Teaches practical troubleshooting strategies.

ETR 151-152 - Electronic Circuits and Troubleshooting I-II (2 cr. each)  
Studies analog and digital circuits and systems with standard circuit test and troubleshooting procedures. Part I and II of II.

ETR 177 - Industrial Robotics and Robotics Programming (3 cr.)  
Prepares the student to safely operate and maintain a robot and develop and maintain basic robot programs.

ETR 180 - Industrial Ethernet Networking (2 cr.)  
Examines the theory and implementation of digital and communications systems. Features OSI model and plant floor networks. May include optical, wireless, satellite and other communications systems.

ETR 190 - Coordinated Internship (1-5 cr.)  
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

ETR 241-242 - Electronic Communications I-II (3 cr. each)  
Studies noise, information and bandwidth, modulation and demodulation, transmitters and receivers, wave propagation, antennas and transmission lines. Includes broad band communication systems, microwave, both terrestrial and satellite, fiber optics, multiplexing and associated hardware. Part I and II of II.

ETR 243 - Digital, Analog, and Data Communications Systems I (4 cr.)  
Teaches theory and implementation of digital and analog circuits in communication systems. Includes PCM, multiplexing, analog modulation, analysis and performance of transmitters and receivers. Includes optical satellite and other communications systems. Prerequisite: Knowledge of D.C./A.C. theory and devices.

ETR 246 - Electronic Motor Drives Systems (3 cr.)  
Introduces advanced operations, setup, programming and troubleshooting of electronic motor drives that are used for the control of industrial AC motors.

ETR 255 - Active Devices and Circuits (3 cr.)  
Teaches theory of active devices and circuits, devices and circuit parameters, semiconductor characteristics and the application of circuits to active systems. Includes testing and analysis of active devices and circuits. Prerequisite: Knowledge of D.C./A.C. theory.

ETR 282-283 - Digital Systems I-II (3 cr. each)  
Includes programming, circuitry, logic, operation interfacing of computer and micro processing systems. Includes pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Part I and II of II.

ETR 286 - Electronic Motor Drives Systems (3 cr.)  
Introduces advanced operations, setup, programming and troubleshooting of electronic motor drives that are used for the control of industrial AC motors.

FIN 215 - Financial Management (3 cr.)  
Introduces basic financial management topics including statement analysis, working capital; capital budgeting, and long-term financing. Focuses on Net Present Value and Internal Rate of Return techniques, lease vs. buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making.

(GEO) Geography  
GEO 210 - People and the Land: Introduction to Cultural Geography (3 cr.)  
Focuses on the relationship between culture and geography.
Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps.

GEO 220 - World Regional Geography (3 cr.)
Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps.

(GIS) Geograph Info Systems

GIS 293 - Studies In (1-5 cr.)
Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. Variable hours per week.

(GOL) Geology

GOL 105 - Physical Geology (4 cr.)
Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation.

GOL 106 - Historical Geology (4 cr.)
Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life and interprets rock and fossil record.

(HIM) Health Information Management

HIM 105 - Current Procedural Terminology (2 cr.)
Develops skills in coding a diagnosis and/or procedure according to the principles of Current Procedural Terminology (CPT) Coding. NOT INTENDED FOR HIT MAJORS. Prerequisite: HLT 143.

HIM 106 - International Classification of Diseases I (2 cr.)
Introduces International Classification of Diseases Clinical Modification Coding I (ICD-10-CM) coding classification system and provides actual coding exercises. NOT INTENDED FOR HIT MAJORS. Prerequisite: HLT 143.

HIM 107 - International Classification of Diseases II (3 cr.)
Stresses advanced International Classification of Diseases Clinical Modification Coding II (ICD-10-CM) coding skills through practical exercises. NOT INTENDED FOR HIT MAJORS. Prerequisite: HIT 106 or HIM 106.

HIM 130 - Healthcare Information Systems (3 cr.)
Teaches basic concepts of microcomputer software (to include operating systems, word processing, spreadsheets, and database applications. Focuses on microcomputer applications and information systems in the Healthcare environment. Provides a working introduction to electronic health information systems for allied health, teaching students how the adoption of electronic health records affects them as future healthcare professionals.

HIM 143 - Managing Electronic Billing in a Medical Practice (3 cr.)
Presents practical knowledge on use of computer technology in medical practice management. Develops basic skills in preparation of universal billing claim. Explores insurance claim processing issues.

HIM 226 - Legal Aspects of Health Record Documentation (2 cr.)
Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of patient's health records.

HIM 253 - Health Records Coding (3 cr.)
Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Prerequisite: HIM 107

(HIS) History

HIS 101, HIS 102 - History of Western Civilization I-II (3 cr. each)
Examines the development of western civilization from ancient times to the present. Part I and II of II.

HIS 111, HIS 112 - History of World Civilizations I-II (3 cr. each)
Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Part I and II of II. This is a Passport Transfer course.

HIS 121, HIS 122 - United States History I-II (3 cr. each)
Surveys United States history from its beginning to the present. Part I and II of II. This is a Passport Transfer course.

HIS 266 - Military History of the Civil War (3 cr.)
Analyzes military campaigns of the Civil War, including factors contributing to the defeat of the Confederacy and problems created by the war. May include field trips to Civil War sites in the region.

HIS 268 - The American Constitution (3 cr.)
Analyzes the origin and development of the United States Constitution. Includes the evolution of civil liberties, property rights, contracts, due process, judicial review, federal-state relationships, and corporate-government relations.

(HLT) Health

HLT 100 - First Aid and Cardiopulmonary Resuscitation (3 cr.)
Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation.
HLT 105 - Cardiopulmonary Resuscitation (1 cr.)
Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Equivalent to EMS 100.

HLT 106 - First Aid and Safety (2 cr.)
Focuses on the principles and techniques of safety and first aid.

HLT 116 - Introduction to Personal Wellness Concepts (3 cr.)
Introduces students to the dimensions of wellness including the physical, emotional, environmental, spiritual, occupational, and social components.

HLT 121 - Introduction to Drug Use and Abuse (3 cr.)
Explores the use and abuse of drugs in contemporary society with emphasis upon sociological, physiological, and psychological effects of drugs.

HLT 130 - Nutrition and Diet Therapy (2 cr.)
Studies nutrients, sources, functions, and requirements with an introduction to diet therapy.

HLT 141 - Intro to Medical Terminology (2 cr.)
Focuses on medical terminology for students preparing for careers in the health professions.

HLT 143-144 - Medical Terminology I-II (3 cr. each)
Provides an understanding of medical abbreviations and terms. Includes the study of prefixes, suffixes, word stems, and technical terms with emphasis on proper spelling, pronunciation, and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Part I and II of II.

HLT 200 - Human Sexuality (3 cr.)
Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations.

HLT 204 - Women's Health (3 cr.)
Explores current issues related to women's health and wellness with an emphasis upon prevention of disease and optimum wellbeing. Takes a multi-ethnic approach to exploring the most up-to-date findings, diagnostic tools, and treatments for breast cancer, reproductive tract illness, heart, and other common diseases faced by women from puberty through menopause.

HLT 215 - Personal Stress and Stress Management (3 cr.)
Provides a basic understanding of stress and its physical, psychological, and social effects. Includes the relationships between stress and change, self-evaluation, sources of stress, and current coping skills for handling stress.

HLT 230 - Principles of Nutrition and Human Development (3 cr.)
Teaches the relationship between nutrition and human development. Emphasizes nutrients, balanced diet, weight control, and the nutritional needs of an individual.

HLT 250 - General Pharmacology (3 cr.)
Emphasizes general pharmacology for the health related professions covering general principles of drug actions/reactions, major drug classes, specific agent within each class, and routine mathematical calculations needed to determine desired dosages.

HLT 261 - Basic Pharmacy I (3 cr.)
Explores the basics of general pharmacy, reading prescriptions, symbols, packages, pharmacy calculations. Teaches measuring compounds of drugs, dosage forms, drug laws, and drug classifications. Part I of II.

HLT 263 - Basic Pharmacy I Lab (1 cr.)
Provides practical experience to supplement instruction in HLT 261-262. Should be taken concurrently with HLT 261-262, in appropriate curricula, as identified by the college. Part I of II.

HLT 290 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(HRI) Hotel-Restaurant-Institutional Management

HRI 101 - Hotel-Restaurant Organization and Management I (3 cr.)
Introduces the history, opportunities, problems and trends of the hospitality industry. Covers the organization of the various sectors of the hospitality industry including human resources, general business considerations, and management theory. Part I of II.

HRI 106 - Principles of Culinary Arts I-II (3 cr.)
Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Part I of II.

HRI 119 - Applied Nutrition for Food Service (3 cr.)
Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. A laboratory co-requisite (HRI 122) may be required as identified by the college. A laboratory co-requisite (HRI 122) may be required as identified by the college.

HRI 128 - Principles of Baking (3 cr.)
Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries and confections.
HRI 140 - Fundamentals of Quality for the Hospitality Industry (3 cr.)
Teaches quality in the hospitality industry, including material on the total quality management movement. Emphasizes quality from the customer's perspective.

HRI 154 - Principles of Hospitality Management (3 cr.)
Presents basic understanding of the hospitality industry by tracing the industry's growth and development, reviewing the organization and management of lodging, food, and beverage operations, and focusing on industry opportunities and future trends.

HRI 158 - Sanitation and Safety (3 cr.)
Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of foodborne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions.

HRI 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

HRI 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

HRI 215 - Food Purchasing (3 cr.)
Presents the method and procedures for purchasing food for hotels, restaurants and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versions price buying, yields and quality control.

HRI 218 - Fruit, Vegetable, and Starch Preparation (3 cr.)
Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes and farinaceous products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as meal components.

HRI 219 - Stock, Soup, and Sauce Preparation (3 cr.)
Instructs the student in the preparation of stocks, soups, and sauces. Promotes the knowledge/skills to prepare stocks, soups, and sauces, and to select appropriate uses as meal components.

HRI 220 - Meat, Seafood and Poultry Preparation (3 cr.)
Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the knowledge/skills required to select appropriate use of these foods as meal components.

HRI 224 - Recipe and Menu Management (3 cr.)
Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and non-commercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin.

HRI 241 - Supervision in the Hospitality Industry (3 cr.)
Provides a comprehensive review of considerations for preparing students to become effective supervisors in restaurants and lodging operations.

HRI 251 - Food and Beverage Cost Control I (3cr.)
Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Part I of II.

HRI 257 - Catering Management (3 cr.)
Studies special functions in the hospitality industry. Presents lecture and demonstration in banquet layout, menus, services, sales and supervision.

HRI 290 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

HRI 298 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(HUM) Humanities

HUM 165 - Controversial Issues in Contemporary American Culture (3 cr.)
Introduces students to selected issues in contemporary American culture. Includes topic areas ranging from welfare reform, economic development, privacy, environmental protection and conservation, evolution vs. creation, to family values, and special interest lobbying in our state and national governments. Focuses on the development of the student's critical thinking skills by analyzing, evaluating, and reflecting on opposing sides of the same issue as expressed by public leaders, special interest groups and academicians.

HUM 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

HUM 198 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.
opportunities in the field. May be repeated for credit. Variable hours.

HUM 246 - Creative Thinking (3 cr.)
Examines and analyzes creative and effective thinking processes with applications in individual and group projects to solve business, scientific, environmental, and other practical problems.

HUM 256 - Mythology in Literature and the Arts (3 cr.)
Studies cultural expressions of mythology in literature and the arts. Considers several of the following mythologies, with emphasis on parallels and divergences: Egyptian, Near-Eastern, Greek, Roman, Celtic, Norse, Asian, and African.

HUM 260 - Survey of Twentieth-Century Culture (3 cr.)
Explores literature, visual arts, philosophy, music, and history of our time from an interdisciplinary perspective.

(IND) Industrial Engineering Technology

IND 103 - Industrial Methods (3 cr.)
Covers theoretical knowledge necessary for familiarization with common hand tools, common power tools, measuring tools and techniques, fastening components and procedures, grinding operations, metal cutting operations, and other miscellaneous tasks.

IND 123 - Introduction to Lean Manufacturing and Six Sigma (1 cr.)
Covers basic Lean and Six Sigma concepts. Examines the importance of Lean and Six Sigma as pertaining to the world of manufacturing. Provides students with the opportunity to demonstrate the impact of Lean and Six Sigma manufacturing environment.

IND 137 - Team Concepts and Problem Solving (3 cr.)
Studies team concepts and problem-solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes.

IND 138 - Industrial Leadership and Career Development (1 cr.)
Covers the importance of effective and ethical organizational behavior in career development. Provides students with guidance on how to become a high performance team member. Presents the tools necessary to manage and motivate team members in a manufacturing environment. Focuses on communication skills, professionalism, and ethics. Examines conflict resolution skills and the ability to identify behavioral types.

IND 140 – Quality Control (2cr.)
Studies history, structure, and organization of the quality control unit. May include incoming material control, product and process control, and cost control.

IND 145 – Introduction to Metrology (3 cr.)
Studies principles of measurement and calibration control, application of statistics to measurement processes, and standards of measurements in calibration. May include the use of gauges and instruments in modern production and dimensional control concepts.

IND 160 – Introduction to Robotics (3 cr.)
Studies evolution and history of robotics with an emphasis on automated and flexible manufacturing. Presents advantages and limitations of present robot systems.

IND 181 - World Class Manufacturing I (3 cr.)
Studies the principles and applications of the globalization of industry. Emphasizes the fundamentals of interpersonal/team process, organization skills, total quality tools for continuous improvement, statistical process control, manufacturing resource planning and just-in-time.

IND 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours. Variable hours

IND 199 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

IND 243 - Principles and Applications of Mechatronics (3 cr.)
Introduces terminology and principles related to Mechatronic system design and application. Integrates concepts of electrical/electronic, mechanical and computer technologies in the development, setup, operation and troubleshooting of automated products and systems. Covers breakdown of various automated manufacturing operations with emphasis on system planning, development and troubleshooting processes. Prerequisite: Divisional Approval.

IND 298 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(INS) Instrumentation

INS 121 - Introduction to Measurement and Control (3 cr.)
Introduces applications of modern sensors, measurement equipment, and control systems, including operation and functions of components. Includes computer data acquisition and control with programming languages. Prerequisite: Divisional approval.

INS 230 - Instrumentation I (3 cr.)
Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow
cross-platform, low-bandwidth animations utilizing a vector

Provides techniques in interactive design concepts to create

ITD 212 - Interactive Web Design (3 cr.)

and maintenance utilizing web editor software(s).

Incorporates advanced techniques in web site planning,

ITD 210 - Web Page Design II (3 cr.)

forms, and frames.

ITD 112 - Designing Web Page Graphics (3 cr.)

Explores the creation of digital graphics for web design.

Includes headings, lists, links, images, image maps, tables,

ITD 110 - Web Page Design I (3 cr.)

Stresses a working knowledge of web site designs,

construction, and management using HTML or XHTML.

includes headings, lists, links, images, image maps, tables,

ITD 115 - Web Page Design and Site Management (3 cr.)

Explores fundamentals of creating web pages and site

management with web editing software. Students will learn

techniques of web page design as well as managing the

resources required to author and maintain a web site.

ITD 120 - Design Concepts for Mobile Applications (4 cr.)

Provides skills for designing both Web-based and stand-

alone applications for wireless devices. Details discussions

of the needs for applications including mobile phones and a

range of rich hand-held devices such as PDA's. Emphasizes

the importance of usability, accessibility, optimization and

performance to create fast-loading business enterprise

applications and games.

ITD 132 - Structured Query Language (3 cr.)

Incorporates a working introduction to commands, functions

and operators used in SQL for extracting data from standard

databases.

ITD 198 - Seminar and Project (1-5 cr.)

Requires completion of a project or research report

related to the student’s occupational objectives and a

study of approaches to the selection and pursuit of career

opportunities in the field. May be repeated for credit. Variable

hours.

ITD 210 - Web Page Design II (3 cr.)

Incorporates advanced techniques in web site planning,

design, usability, accessibility, advanced site management,

and maintenance utilizing web editor software(s).

ITD 212 - Interactive Web Design (3 cr.)

Provides techniques in interactive design concepts to create
cross-platform, low-bandwidth animations utilizing a vector

based application. Emphasizes the importance of usability,

accessibility, optimization and performance.

ITD 250 - Database Architecture and Administration (3 cr.)

Involves in-depth instruction about the underlying

architecture of databases and the handling of database

administration.

ITD 256 - Advanced Database Management (3 cr.)

Focuses in-depth instruction in the handling of critical tasks

of planning and implementing large databases. Includes an

introduction to concepts of advanced data warehousing and
database configuration.

ITD 258 - Database Performance and Tuning (3 cr.)

Emphasizes instruction to optimize the performance of a
database management system. Includes methods for tuning
data access and storage and discussions of resolving data
performance problems.

ITD 260 - Data Modeling and Design (3 cr.)

Introduces life cycle application development methodologies

in a systematic approach to developing relational databases

and designing applications. Presents content introducing

functional and business process modeling, using modeling

information to produce application designs, analyzing data

requirements as entities, attributes, and relationships and

map an entity relationship diagram to an initial database

design. Identifies the available automated development tools

and utilizes Oracle Developer software to perform practical

applications of these concepts. Prerequisite: Oracle or

SQL programming including DDL, DML, transaction control

& queries with SELECT statement and some exposure to

procedural language programming.

(ITD) Information Technology Database

ITD 110 - Web Page Design I (3 cr.)

Reviews current business software applications for

microcomputers emphasizing comparison of a variety of

software packages. Provides experience with multiple

operating system commands, database, spreadsheet, and

word processing programs.

ITE 120 - Principles of Information Systems (3 cr.)

Provides an overview of the fundamentals of computer

information systems. Focuses on the role of computers in

business today including hardware, software, analysis,

design and implementation of information systems. Includes

an introduction to computer ethics, and business and

personal security. Exposes students to techniques used in

programming and system development. Utilizes a hands-on
component for spreadsheets, databases, and web design applications.

ITE 130 - Introduction to Internet Services (3 cr.)  Provides students with a working knowledge of Internet terminology and services including e-mail, WWW browsing, search engines, ftp, file compression, and other services using a variety of software packages. Provides instruction for basic web page construction.

ITE 131 - Survey of Internet Services (1 cr.)  Introduces students to basic Internet terminology and services including e-mail, WWW browsing, search engines, ftp, telnet, and other services.

ITE 140 - Spreadsheet Software (3 cr.)  Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data.

ITE 141 – Microcomputer Software: Spreadsheets (1 cr.)  Provides first-time users with sufficient information to make practical use of spreadsheet software using the basic of building spreadsheets.

ITE 150 - Desktop Database Software (4 cr.)  Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Includes database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels.

ITE 182 - User Support/Help Desk Principles (3 cr.)  Introduces a variety of tools and techniques that are used to provide user support in help desk operations. Includes help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations, and software, needs analysis, facilities management, and other related topics related to end user support.

ITE 195 - Topics In (1-5 cr.)  Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

ITE 215 - Advanced Computer Applications and Integration (4 cr.)  Incorporates advanced computer concepts including the integration of a software suite.

ITE 221 - PC Hardware and OS Architecture (3-4 cr.)  Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 3-4 hours per week. 3-4 credits.

ITE 225 - Mobile Computing (3 cr.)  Focuses on the key technical and business issues related to mobile computing: mobile environments, support services, mobile communication systems, and applications.

(ITE) Information Technology Networking

ITN 102 - Introduction to Networked Client Operating Systems (LAN) (4 cr.)  Consists of instruction in the installation, configuration, administration, and troubleshooting of networked client operating systems in a data communications environment. This course can utilize any mixture of available networked client operating systems.

ITN 103 - Administration of Networked Servers (3-4 cr.)  Instruction focuses on the installation, configuration, and management of local area networked servers. Topics covered include support for local area networked devices, system services, and deployment of networked operating systems. This course can include any version of Windows or Linux Server Platforms. Lecture 2-3 hours. Laboratory 2 hours. Total 4-5 hours per week. 3-4 credits.

ITN 104 - Maintaining Servers in the Networked Infrastructure (4 cr.)  Provides instruction on how to implement, manage, and maintain servers within a communications infrastructure. Topics covered include support for Terminal Services, Remote Access, Group Policy, NAT, IPSec, and specific security configurations.

ITN 106 - Microcomputer Operating Systems (3 cr.)  Teaches use of operating system utilities and multiple-level directory structures, creation of batch files, and configuration of microcomputer environments. May include a study of graphical user interfaces.

ITN 107 - Personal Computer Hardware and Troubleshooting (3 cr.)  Includes specially designed instruction to give a student a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components.

ITN 109 - Internet and Network Foundation (3 cr.)  Provides a basic comprehension of Internet and network technologies including IT job roles, connection methods, TCP/IP functionality and DNS. Explores web server technologies with security and project management concepts. Introduces network creation, physical and logical topologies including media properties, server types, IP addressing and network security.

ITN 154 - Network Fundamentals, Router Basics, and Configuration (ICND1) - Cisco (3-4 cr.)  Provides instruction in the fundamentals of networking environments, the basics of router operations, and basic
router configuration. Lecture 2-3 hours. Laboratory 2 hours. Total 4-5 hours per week. 3-4 credits.

ITN 155 - Switching, Wireless, and WAN Technologies (ICND2) - Cisco (4 cr.) Provides the skills and knowledge to install, operate, and troubleshoot a small-to-medium sized branch office enterprise network, including configuring several switches and routers, configuring wireless devices, configuring VLANS, connecting to a WAN, and implementing network security.

ITN 156 - Basic Switching and Routing - Cisco (4 cr.) Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANS and network management.

ITN 157 - WAN Technologies - Cisco (4 cr.) Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP.

ITN 201 - Administration & Management of Network Infrastructures (3 cr.) Focuses on the administration and management of network infrastructures. Covers network addressing of clients and servers, naming resolution, remote access, security, printing services, and troubleshooting. Uses network operating system as the delivery tools.

ITN 209 - Voice Over Internet Protocol (3 cr.) Discusses in depth the concept, theory and principles of Voice over Internet Protocol technology. Reviews the existing PSTN architecture. Examines VOIP Quality of Service, various speech coding techniques, the H.323 architecture, Session Initiation Protocol, Media Gateway Protocol and the relationship between VOIP and SS7.

ITN 213 - Information Storage and Management (4 cr.) Focuses on advanced storage systems, protocol, and architectures including Storage Area Networks (SAN), Network Attached Storage (NAS), Fiber Channel Networks, Internet Protocol SANs (IPSAN), iSCSI, and Content Addressable Storage (CAS).

ITN 231 - Desktop Virtualization (4 cr.) Explores the concepts and capabilities of desktop and application virtualization with a focus on the installation, configuration, and management of the virtual desktop and application infrastructure.

ITN 245 - Network Troubleshooting (3 cr.) Focuses on servicing and maintaining local area networks (LANS). Teaches network installation, network troubleshooting, installation of file servers and workstations, configuring of network boards and cables, and diagnosing common network problems.

ITN 254 - Virtual Infrastructure: Installation and Configuration (4 cr.) Explores concepts and capabilities of virtual architecture with a focus on the installation, configuration, and management of a virtual infrastructure, ESX Server, and Virtual Center. Covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management, and engineering for high availability.

ITN 255 - Virtual Infrastructure: Deployment, Security and Analysis (4 cr.) Focuses on the deployment, security, and analysis of the virtual infrastructure, including scripted installations, advanced virtual switching for security, server monitoring for health and resource management, high-availability management, system backups, and fault analysis.

ITN 257 - Cloud Computing: Infrastructure and Services (3 cr.) Focuses on cloud infrastructure, deployment, security models, and the key considerations in migrating to cloud computing. Covers the technologies and processes required to build traditional, virtualized, and cloud data center environments, including computation, storage, networking, desktop and application virtualization, business continuity, security, and management.

ITN 258 - Cloud Computing: Infrastructure and Services (3 cr.) Focuses on cloud infrastructure, deployment, security models, and the key considerations in migrating to cloud computing. Covers the technologies and processes required to build traditional, virtualized, and cloud data center environments, including computation, storage, networking, desktop and application virtualization, business continuity, security, and management.

ITN 260 - Network Security Basics (3-4 cr.) Provides instruction in the basics of network security in depth. Includes security objectives, security architecture, security models and security layers; risk management, network security policy, and security training. Includes the five security keys, confidentiality integrity, availability, accountability and auditability. Lecture 3-4 hours per week. 3-4 credits.


ITN 262 - Network Communication, Security and Authentication (4 cr.) Covers an in-depth exploration of various communication protocols with a concentration on TCP/IP. Explores communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Includes Internet architecture, routing, addressing, topology, fragmentation and protocol analysis, and the use of various utilities to explore TCP/IP.

ITN 263 - Internet/Intranet Firewalls and E-Commerce Security (4 cr.) Gives an in-depth exploration of firewall, Web security, and e-commerce security. Explores firewall concepts,
types, topology and the firewall’s relationship to the TCP/IP protocol. Includes client/server architecture, the Web server, HTML and HTTP in relation to Web Security, and digital certification, D.509, and public key infrastructure (PKI).

ITN 287 - Legal Topics in Network Security (3 cr.)
Conveys an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional, and constitutional issues related to computer crimes and privacy. Includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age.

ITN 276 - Computer Forensics I (4 cr.)
Teaches computer forensic investigation techniques for collecting computer-related evidence at the physical layer from a variety of digital media (hard drives, compact flash and PDAs) and performing analysis at the file system layer. Prerequisite: ITN 106, ITN 107. Co-requisite: ITN 260. Credit will be given to ITN 275 or ITN 276 and ITN 277, but not all three courses.

ITN 277 - Computer Forensics II (3 cr.)
Develops skills in the forensic extraction of computer evidence at a logical level using a variety of operating systems and applications (i.e., e-mail) and learn techniques for recovering data from virtual memory, temporary Internet files, and intentionally hidden files. Prerequisite: ITN 276, Computer Forensics I. Credit will be given to ITN 275 or ITN 276 and ITN 277, but not all three courses.

(ITP) Information Technology Programming

ITP - 100 Software Design (3-4 cr.)
Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 3-4 hours per week. 3-4 credits.

ITP 112 - Visual Basic.NET I (4 cr.)
Concentrates instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET framework. Emphasizes program construction algorithm development, coding debugging, and documentation of graphical user interface applications.

ITP 120 - Java Programming I (4 cr.)
Entails instruction in fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications.

ITP 134 - Visual C++ Programming I (4 cr.)
Provides instruction in fundamentals of object-oriented programming and design using C++ for GUI applications. Emphasizes software design and construction using the concepts of foundation classes.

ITP 136 - C# Programming I (4 cr.)
Presents instruction in fundamentals of object-oriented programming and design using C#. Emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET framework.

ITP 140 - Client Side Scripting (3 cr.)
Provides instruction in fundamentals of Internet application design, development, and deployment using client side scripting language(s).

ITP 160 - Introduction to Game Design and Development (3 cr.)
Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical contest, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrate 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds.

ITP 165 - Gaming and Simulation (3 cr.)
Introduces students to the concepts and applications of gaming and simulation through the use of gaming and simulation tools, as well as through basic programming skills.

ITP 170 - Project Management (3 cr.)
Introduces the concepts of project management as defined by the Project Management Institute, the accreditation body for project management.

ITP 200 - Data Structure and Algorithms (3 cr.)
Introduces searching and sorting algorithms and basic data structures. Examines data structures and algorithms in a given computer language including sets, strings, stacks, queries, arrays, linked lists, and trees.

ITP 214 - Windows Mobile Development (4 cr.)
Provides skills for creating mobile enterprise solutions by using the Smart Device Extensions for Microsoft Visual Studio .NET and the Microsoft .NET Compact Framework for wireless devices. Develops systems including mobile phones and a range of rich hand-held devices such as PDAs using applications utilizing the .NET Compact Framework. Covers Enterprise business applications and game applications.

ITP 215 - XML Web Services (4 cr.)
Presents the techniques for developing and implementing Web-based applications with Web forms, ASP.NET, and the Microsoft.NET Framework. Includes Window services.NET remote objects, XML Web services, security, and consuming and manipulating Web data.
ITP 220 - Java Programming II (4 cr.)
Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads.

ITP 224 - Mobile Java ME (4 cr.)
Provides skills for creating Java ME applications for wireless devices. Systems will be developed for mobile phones and a range of rich hand-held devices such as PDAs with applications utilizing the Java ME architecture and Java Specification Requests (JSRs).

ITP 225 - Web Scripting Languages (3 cr.)
Introduces students to the principles, systems, and tools used to implement Web applications. Provides students with a comprehensive introduction to the programming tools and skills required to build and maintain interactive Web sites. Students will develop Web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Prerequisites: ITD 110, ITP 100.

ITP 226 - Mobile Java Android Development (4 cr.)
Provides the necessary design and programming skills required for developing applications on mobile devices (smartphones, tablets, etc.). Utilize the Java-based Android Development Kit to create Android applications, from concept to business model to final product.

ITP 236 - C# Programming II (4 cr.)
Focuses on application of advanced object-oriented techniques using C# for application development. Emphasizes database connectivity and networking using the .NET Framework.

ITP 244 - ASP.NET--Server Side Programming (4 cr.)
Entails instruction in creation of ASP.NET Web applications to deliver dynamic content to a Web site utilizing server controls, web forms, and web services to accomplish complex data access tasks.

ITP 246 - JAVA - Server Side Programming (3 cr.)
Provides instruction in application and integration of web-based clients and server-side java to three-tier business applications. Includes us of tools UML, XML, Java servlets, JSPs, and JDBC database access.

ITP 251 - Systems Analysis and Design (4 cr.)
Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Covers methodologies related to identification of information requirements, feasibility in the areas of economic, technical and social requirements, and related issues are included in course content. Software applications may be used to enhance student skills.

ITP 258 - Systems Development Project (3 cr.)
Provides instruction in application of life cycle system development methodologies using a case study which incorporates feasibility study system analysis, system design, program specification, and implementation planning. Course project assignment(s) will have students perform as members of system development teams.

ITP 265 - Applications of Modeling and Simulation (4 cr.)
Expands understanding of Modeling and Simulation via the implementation of a capstone project. Continues to develop object oriented programming skills. Expands three dimensional visualization skills. Examines all aspects of the project lifecycle. Develops workplace readiness for the Modeling and Simulation industry.

(MAC) Machine Technology

MAC 101 - Machine Shop I (8 cr.)
Introduces the machinist to identification, care, and use of precision tools and instruments. Emphasizes the operation of the drill press, lathe, power saw, grinder, and milling machine. Covers the sharpening of lathe curing tools, safety, and good housekeeping. Provides for operation and setup on the various types of precision grinders, milling machines, and drill presses. Part I of II.

MAC 102 - Machine Shop II (7 cr.)
Introduces the machinist to identification, care, and use of precision tools and instruments. Emphasizes the operation of the drill press, lathe, power saw, grinder, and milling machine. Covers the sharpening of lathe curing tools, safety, and good housekeeping. Provides for operation and setup on the various types of precision grinders, milling machines, and drill presses. Part II of II.

MAC 108 - Computer Numerically Controlled (CNC) Grinding (2 cr.)
Provides students with the opportunity to demonstrate proper techniques in computer numerically controlled (CNC) outside diameter (OD), internal diameter (ID), and surface grinding. Covers the programming and operation of various CNC grinders and the set-up of selected grinding operations. Focuses on understanding the importance of machine parameters and wheel selection to surface finish in grinding applications.

MAC 116 – Machinist Handbook (2 cr.)
Uses the machinist handbook as a ready reference book of tabular data, formulas, designs and processes relating to machine technology.

MAC 121 - Numerical Control I (2 cr.)
Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Part I of II.

MAC 122 - Numerical Control II (2 cr.)
Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Part II of II.
MAC 123 - Computer Numerical Control III (2 cr.)
Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation.

MAC 125 – Intro to Geometrical Dimensioning and Tolerance in Machining (3 cr.)
Presents basic topics in Geometrical Dimensioning and Tolerancing (GD&T). Explains internationally recognized GD&T symbols. Explains the importance of a feature control frame. Covers the Cartesian coordinate system in relation to precision components. Covers theoretical and practical concepts of geometric controls relative to design, tooling, production, and inspection.

MAC 126 - Introductory CNC Programming (3 cr.)
Introduces programming of computerized numerical control machines with hands-on programming and operation of CNC machines.

MAC 127 - Advanced CNC Programming (3 cr.)
Provides in-depth study of programming computerized numerical control machines.

MAC 128 - CNC Programming (2 cr.)
Teaches programming of computerized numerical control machines. Focuses on CNC machining processes.

MAC 130 - Introduction to Electric Discharge Machining (EDM) (2 cr.)
Introduces the equipment, processes, and components of electric discharge machining. Includes basic operation and programming for computer numerical control (CNC) electrical discharge machining (EDM).

MAC 134 - CMM Operation and Programming (2 cr.)
Focuses on inspection using a Coordinate Measuring Machine. Includes hands-on demonstration of CMM setup, initialization and operation. Covers the essential aspects of the software and CMM operation, using a sample part for hands-on practice. Prerequisites: Determined by College.

MAC 146 - Metals/Heat Treatment (2 cr.)
Provides approach to metals and their structure. Gives working knowledge of methods of treating ferrous and non-ferrous metals.

MAC 150 - Introduction to Computer-Aided Manufacturing (3 cr.)
Introduces computer aided manufacturing (CAM) with emphasis on programming of numerical control machinery. Teaches program writing procedures using proper language and logic and a CAM programming system to produce numerical control code for machines. Teaches basic computer usage, 2 1/2D and 3D CAD-CAM integration, and code-to-machine transfer.

MAC 161-162 Machine Shop Practices I-II (3 cr. each)
Introduces safety procedures, bench work, hand tools, precision measuring instruments, drill presses, cut-off saws, engine lathes, manual surface grinders, and milling machines. Part I and II of II.

MAC 163-164 Machine Shop Practices III-IV (3 cr. each)
Offers practice in the operation of the drill press, engine lathe, vertical milling machine, horizontal milling machine, and the surface grinder. Introduces practical heat treatment of directly hardenable steels commonly used in machine shops. Part I and II of II.

MAC 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

MAC 209 - Standards, Measurements and Calculations (3 cr.)
Presents typical mathematical and mechanical problems requiring the use of reference standards such as the Machinery's Handbook for solution. Presents use of the Coordinate Measuring Machine for solution.

MAC 211 – Dimensional Inspection I (3 cr.)
Presents instruction in the proper selection, application and care of basic tools and measuring techniques required for reliable inspection. Demonstrates the importance of dimensional inspection in a high precision manufacturing environment. Teaches students the inspector's role in compliance and reliability.

MAC 212 – Dimensional Inspection II (3 cr.)
Understand and apply differential coefficient of expansion to measurements. Demonstrate proficiency in obtaining multiple measurements from a reference plane to inspect a single feature. Demonstrate proficiency using the computer assisted optical comparator to measure circles, arcs, and angles. Demonstrate proficiency when using surface roundness and surface finish gauges. Understand the techniques for establishing part alignments, centerlines, rotation, and elevation. Compare coordinate measuring machine (CMM) to bench inspection results.

MAC 218 – Intermediate4 CMM Operation and Programming (2 cr.)
Understand intermediate level coordinate measuring machine (CMM) programming and operation. Apply CMM programming to inspect complex components. Set-up and operation of intermediate CMM operations. Create graphical reports based on CMM measurement results. Generate inspection reports based on geometrical dimensioning. Import CMM measurement data into a statistical process control database.

MAC 221-222-223 - Advanced Machine Tool Operations I-II-III (7 cr. each)
Focuses on advanced lathe and mill work with concentration on fits, finishes, inspection, quality control, and basic heat treating. Includes design and construction of specific
projects to determine the student's operational knowledge of all equipment. Part I, II and III of III.

MAC 224 - Advanced Tooling Applications (3 cr.)
Provides students with the opportunity to demonstrate the techniques for selecting proper tool applications. Focuses on complex tool geometries and their effects on machining parameters in a precision environment. Examines production advantages of advanced tooling applications. Highlights 5-axis milling programming to maximize tool life and optimize performance.

MAC 251 - Advanced Computer Aided Manufacturing (CAM) Modeling and Simulation (3 cr.)
Provides students with the opportunity to demonstrate the usage of computer-aided manufacturing (CAM) in a complex 5-axis milling and 3-axis turning environment. Examines model and program complex parts using computer-aided design (CAD) and CAM software and features various complex multi-axis machining methods and applications. Applies machining methods to a flow cell precision machining production environment to witness positive production and quality impacts.

MAC 253 - Advanced Coordinate Measuring Machine (CMM) Operating and Programming (3 cr.)
Provides students with the opportunity to demonstrate advanced coordinate measuring machine (CMM) programming using modeling and scanning. Examines advanced geometrical dimensioning and tolerancing (GD&T) theories and reports. Covers advanced machine tool calibration, investigate form, and use complex visual inspection equipment.

MAC 254 - Machining Flow Cell IT Integration (2 cr.)
Provides students with the opportunity to demonstrate process and quality control through the use of information technology (IT) systems in the manufacturing environment. Covers the use of measure cuts in high-end machining, systems communication, and data transfer to monitor productivity and quality. Features tools to monitor part quality in process.

MAC 255 - Introduction to Supply Chain Strategies for Industry (3 cr.)
Focuses on effective supply chain strategies for industry. Covers first article part inspections and production validation. Demonstrates flow cell ideology in a live flow cell production environment. Examines value stream mapping, customer/supplier roles, and quality systems in addition to proper health and safety guidelines.

MAC 256 - Multi-axis Machine Tool Set-up, Programming and Operation (3 cr.)
Covers the programming and operation of high end 5-axis milling and 3-axis turning machines. Features complex set-ups on 5-axis milling and 3-axis turning machines. Examines technical instructions and guidelines set forth by a flow cell precision machining environment. Demonstrates the necessary standard and quality audits associated with a machining flow cell.

MAC 257 - Precision Machining Flow Cell Capstone (4 cr.)
Provides students with the opportunity to demonstrate various machining methods such as 5-axis milling, 3-axis turning, internal diameter (ID) and outside diameter (OD) grinding in addition to vertical and wire electrical discharge machining (EDM). Covers coordinate measuring machine (CMM) programming and measuring, tool presetting and validation. Examines Lean and Six Sigma methodology in a live precision machining flow cell.

MAC 258 - Tool Inspection, Validation and Presetting (2 cr.)
Covers the importance of tool management and tool presetting in a production environment. Examines tool presetting and tool presetter programming. Provides students with the opportunity to inspect and validate complex tool geometry using a computer numerical controlled (CNC) tool presetter.

MAC 295 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

(MDL) Medical Laboratory

MDL 100 - Introduction to Medical Laboratory Technology (2 cr.)
Introduces the basic principles, techniques and vocabulary applicable to all phases of medical laboratory technology.

MDL 105 - Phlebotomy (4 cr.)
Introduces basic medical terminology, anatomy, physiology, components of health care delivery and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions.

MDL 106 - Clinical Phlebotomy (3 cr.)
Focuses on obtaining blood specimens, processing specimens, managing assignments, assisting with and/or performing specified tests, performing clerical duties and maintaining professional communication. Provides supervised learning in college laboratory and/or cooperating agencies.

MDL 110 - Urinalysis and Body Fluids (3 cr.)
Studies the gross, chemical, and microscopic techniques used in the clinical laboratory. Emphasizes study of clinical specimens which include the urine, feces, cerebrospinal fluid, blood, and body exudates. Introduces specimen collection and preparation.

MDL 125 - Clinical Hematology (3 cr.)
Teaches the cellular elements of blood including blood cell formation, and routine hematological procedures.
MDL 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

MDL 210 - Immunology and Serology (3 cr.)
Teaches principles of basic immunology, physiology of the immune system, diseases involving the immune system, as well as serologic procedures.

MDL 216 - Blood Banking (4 cr.)
Teaches fundamentals of blood grouping and typing, compatibility testing, antibody screening, component preparation, donor selection, and transfusion reactions and investigation.

MDL 225 - Clinical Hematology II (3 cr.)
Teaches advanced study of blood to include coagulation, abnormal bloody formation, and changes seen in various diseases.

MDL 251 - Clinical Microbiology I (3 cr.)
Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Part I of II.

MDL 252 - Clinical Microbiology II (3 cr.)
Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Part II of II.

MDL 262 - Clinical Chemistry and Instrumentation II (4 cr.)
Introduces methods of performing biochemical analysis of clinical specimens. Teaches instrumentation involved in a clinical chemistry laboratory, quality control, and the ability to recognize technical problems. Part II of II.

MDL 281 - Clinical Correlations (1 cr.)
Teaches students to apply knowledge gained in courses offered in the MDL curriculum using primarily a case history form of presentation. Emphasizes critical thinking skills in the practice of laboratory medicine.

MDL 282 - Clinical Laboratory Techniques (3 cr.)
Includes performing techniques, procedures, and interpretations in all areas of the clinical laboratory or simulated laboratory setting.

MDL 290 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(MEC) Mechanical Engineering Technology

MEC 100 - Introduction to Engineering Technology (2 cr.)
Introduces professional fields of engineering technology.

Covers the work of the engineering technologist, professional ethics, division of industrial practice, and engineering problem solving with hand calculator and computer applications.

MEC 111 - Materials for Industry (3 cr.)
Studies the nature, structure, properties, and typical applications of metallic, polymeric, ceramic, and composite materials. Focuses on applications of materials as well as the behavior of materials subjected to external stresses. Addresses as required the earth's limited material resources, energy efficient materials, dependence on foreign sources of materials, material systems, thermal processing, and electronic-related materials.

MEC 126 - Computer Programming for Technologists (2 cr.)
Introduces computer software and programming. Covers programming for the microcomputer using high level languages. Teaches computer solutions of mathematical problems in applications such as circuit analysis and static equilibrium.

MEC 131 - Mechanics I-Statics for Engineering Technology (3 cr.)
Teaches Newton's laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force systems in space.

MEC 132 - Mechanics II Strength of Mat. for Eng. Tech. (3 cr.)
Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress.

MEC 148 - Industrial Pipefitting (3 cr.)
Covers the fundamentals of industrial piping installation, components, and layout. Considers the types of pipe and fabrication of piping systems, as well as the methods used to connect them.

MEC 154 - Mechanical Maintenance I. (3 cr.)
Provides an overview of basic maintenance techniques and processes for industrial mechanics and technicians who are installing and maintaining industrial mechanical and power transmission components.

MEC 161 - Basic Fluid Mechanics: Hydraulics/Pneumatics (3 cr.)
Introduces theory, operation and maintenance of hydraulic/pneumatics devices and systems. Emphasizes the properties of fluids, fluid flow, fluid statics, and the application of Bernoulli's equation.

MEC 162 - Applied Hydraulics and Pneumatics (3 cr.)
Introduces hydraulic and pneumatic systems found in construction equipment, road vehicles, and farm equipment. Includes the basic theory, construction, maintenance and repair of hydraulic and pneumatic power systems.
MEC 168 - Pump Systems (2 cr.)
Introduces the principles and applications of various commercial and industrial pumps and pumping systems with setups to calculate and measure pressure, flow and velocity of fluids within pumping systems.

MEC 169 - Steam Systems (2 cr.)
Introduces the components, principles and applications of various commercial and industrial steam and thermal controlled systems. Covers how to calculate and measure pressure, flow and system performance.

MEC 208 - Materials Handling and Forklift Operation (2 cr.)
Provides guidance and hands-on experience in the use of jib, overhead cranes and the rigging involved for lifting/moving materials and working safely. Covers forklift training and safety issues for operating a forklift on the job site. Course prerequisites/corequisites: SAF 130 or equivalent.

MEC 211-212 - Machine Design I-II (4 cr. each)
Introduces analytical design of bearings, clutches, coupling, brakes, springs, gearing systems, and power shafting. Emphasizes methods of construction, machine parts and specifications of materials, and manufacturing processes. Part I and II of II.

MEC 254 - Mechanical Maintenance II (3 cr.)
Covers advanced maintenance techniques and processes for industrial mechanics and technicians who are installing and maintaining industrial mechanical and power transmission components.

MEC 265 - Fluid Mechanics (3 cr.)
Studies properties of fluids and fluid flow, Bernoulli's theorem, measuring devices, viscosity and dimensional analysis. Emphasizes fluid statics, flow in pipes and channels, and pumps.

MEC 266 - Applications of Fluid Mechanics (3 cr.)
Teaches theory of hydraulic and pneumatic circuits including motors, controls, actuators, valves, plumbing, accumulators, reservoirs, pumps, compressors, and filters.

MEC 268 - Fluid Power - Hydraulic Systems (2 cr.)
Studies hydraulic components and their integration into complex systems including system analysis and troubleshooting. Introduces design considerations necessary for repair and modification. Covers closed loop control and proportional valves with electronic control.

MEC 269 - Fluid Power - Pneumatic Systems (2 cr.)
Teaches pneumatic components, systems and trouble analysis. Introduces basic design for modification and repair. Covers open loop control, fluidics, robotics and computer controls.

(MKT) Marketing

MKT 100 - Principles of Marketing (3 cr.)
Presents principles, methods, and problems involved in marketing to consumers and organizational buyers. Discusses problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of marketing research, legal, social, ethical, e-commerce, and international considerations in marketing.

MKT 110 - Principles of Selling (3 cr.)
Presents a fundamental, skills-based approach to selling and relationship building. Emphasizes learning effective interpersonal communication skills in all areas of the sales process through skill-building activities. Examines entry-level sales careers in retailing, wholesaling, services and industrial selling.

MKT 170 - Customer Service (1 cr.)
Introduces students to the concepts of marketing as they relate to customer service. Teaches development of customer service training and implementation of strategies to improve customer relations and service. Includes lecture, role-playing, and case studies.

MKT 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours

MKT 216 - Retail Organization and Management (3 cr.)
Examines the organization of the retail establishment to accomplish its goals in an effective and efficient manner. Includes study of site location, internal layout, store operations, and security. Examines the retailing mix, the buying or procurement process, pricing, and selling. Studies retail advertising, promotion, and publicity as a coordinated effort to increase store traffic.

MKT 227 - Merchandise Buying and Control (3 cr.)
Studies the merchandising cycle. Explores techniques used in the development of buying resources, merchandising plans, model stock, unit control, and inventory systems. Highlights merchandise selection, policy pricing strategies, and inventory control methods.

MKT 228 - Promotion (3 cr.)
Presents an overview of integrated marketing communications through advertising, public relations, personal selling and sales promotion. Focuses on coordinating these activities into an effective campaign to promote sales for a particular product, business, institution or industry.

MKT 281 - Principles of Internet Marketing (3 cr.)
Introduces students to Internet marketing. Discusses how to implement marketing programs strategically and tactically using online communications tools. Teaches e-marketing strategies.
MKT 282 - Principles of E-Commerce (3 cr.)
Studies on-line business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels and execution of marketing strategies.

MKT 297 - Cooperative Education (1-6 cr.)
Supervises on-the-job training for pay in approved business, industrial and service firms, coordinated by the college's cooperative education office. Is applicable to all occupational-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

MKT 298 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(MTE) Math Essentials

MTE 1 - Operations with Positive Fractions (1 cr.)
Includes operations and problem solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U.S. customary units of measure. Credit is not applicable toward graduation. Prerequisite: Qualifying placement score.

MTE 2 - Operations with Positive Decimals and Percents (1 cr.)
Includes operations and problem solving with positive decimals and percents. Emphasizes applications and includes U.S. customary and metric units of measure. Credit is not applicable toward graduation. Prerequisite(s): MTE 1 or qualifying placement score. Prerequisite: MTE 1 or qualifying placement score.

MTE 3 - Algebra Basics (1 cr.)
Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Prerequisite: MTE 2 or qualifying placement score.

MTE 4 - First Degree Equations and Inequalities in One Variable (1 cr.)
Includes solving first degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. Credit is not applicable toward graduation. Prerequisite(s): MTE 3 or qualifying placement score.

MTE 5 - Linear Equations, Inequalities and Systems of Linear Equations in Two Variables (1 cr.)
Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. Credit is not applicable toward graduation. Prerequisite(s): MTE 4 or qualifying placement score.

MTE 6 - Exponents, Factoring and Polynomial Equations (1 cr.)
The student will learn to perform operations on exponential expressions and polynomials. Students will also learn techniques to factor polynomials and use these techniques to solve polynomial equations. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial equations. Credit is not applicable toward graduation. Prerequisite(s): MTE 5 or qualifying placement score.

MTE 7 - Rational Expressions and Equations (1 cr.)
Includes simplifying rational algebraic expressions, solving rational algebraic equations and solving applications that use rational algebraic equations. Credit is not applicable toward graduation. Prerequisite(s): MTE 6 or qualifying placement score.

MTE 8 - Rational Exponents and Radicals (1 cr.)
Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. Credit is not applicable toward graduation. Prerequisite(s): MTE 7 or qualifying placement score.

MTE 9 - Functions, Quadratic Equations and Parabolas (1 cr.)
Includes an introduction to functions in ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Credit is not applicable toward graduation. Prerequisite(s): MTE 8 or qualifying placement score.

(MTH) Mathematics

MTH 111 - Basic Technical Mathematics (3 cr.)
Provides a foundation in mathematics with emphasis in arithmetic, unit conversion, basic algebra, geometry and trigonometry. This course is intended for CTE programs. Prerequisites: MTE 1-3 Prerequisite OR Corequisite: MCR 1.

MTH 120 - Introduction to Mathematics (3 cr.)
Introduces number systems, logic, basic algebra, and descriptive statistics. Prerequisites: Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Part I of II.

MTH 115 - Technical Mathematics I (3 cr.)
Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisites: Competency in Math Essentials MTE 1-6 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Part I of II.
and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. (Intended for occupational/technical programs.)

MTH 130 - Fundamentals of Reasoning (3 cr.)
Presents elementary concepts of algebra, linear graphing, financial literacy, descriptive statistics, and measurement & geometry. Based on college programs being supported by this course, colleges may opt to add additional topics such as logic or trigonometry. This course is intended for occupational/technical programs. Prerequisite(s): Competency in MTE 1-3 as demonstrated through placement or unit completion or equivalent or Co-requisite: MCR 2

MTH 154* - Quantitative Reasoning (3 cr.)
Presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation. Prerequisite(s): Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent or Co-requisite: MCR 4: Learning Support for Quantitative Reasoning. This is a Passport Transfer course.

MTH 155* - Statistical Reasoning (3 cr.)
Presents elementary statistical methods and concepts including visual data presentation, descriptive statistics, probability, estimation, hypothesis testing, correlation and linear regression. Emphasis is placed on the development of statistical thinking, simulation, and the use of statistical software. Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent or Co-requisite: MCR 5 Learning Support for Statistical Reasoning. This is a Passport Transfer course.

Passport Course: The Passport consists of 16 credit hours in which all courses are transferable and shall satisfy general education requirements at public four-year colleges and universities in Virginia, including many private institutions. Passport courses may satisfy a general education requirement without having a specific course equivalent at the receiving institution.

MTH 161 - PreCalculus I (3 cr.)
Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations and inequalities. Credit will not be awarded for both MTH 161: Precalculus I and MTH 167: Precalculus with Trigonometry or equivalent. Prerequisite(s): Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 6: Learning Support for Precalculus I. This is a Passport Transfer course.

MTH 162 - PreCalculus II (3 cr.)
Presents trigonometry, trigonometric applications including Law of Sines and Cosines and an introduction to conics. Credit will not be awarded for both MTH 162: Precalculus II and MTH 167: Precalculus with Trigonometry or equivalent. Prerequisite(s): Placement or completion of MTH 161: Precalculus I or equivalent with a grade of C or better. This is a Passport Transfer course.

MTH 167 - PreCalculus with Trigonometry (5 cr.)
Presents topics in power, polynomial, rational, exponential, and logarithmic functions, systems of equations, trigonometry, and trigonometric applications, including Law of Sines and Cosines, and an introduction to conics. Credit will not be awarded for both MTH 167: Precalculus with Trigonometry and MTH 161/MTH 162: Precalculus I and II or equivalent. Prerequisite(s): Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 7: Learning Support for Precalculus w/ Trigonometry. This is a Passport Transfer course.

MTH 245 - Statistics I (3 cr.)
Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. Credit will not be awarded for both MTH 155: Statistical Reasoning and MTH 245: Statistics I or equivalent. Prerequisite: Completion of MTH 154 or MTH 161 or equivalent with a grade of C or better. This is a Passport Transfer course.

MTH 261 - Applied Calculus I (3 cr.)
Introduces limits, continuity, differentiation and integration of algebraic, exponential and logarithmic functions, and techniques of integration with an emphasis on applications in business, social sciences and life sciences. Prerequisite: Completion of MTH 161 or equivalent with a grade of C or better. This is a Passport Transfer course.

MTH 263 - Calculus I (4 cr.)
Includes limits, derivatives, differentiation of various types of functions and use of differentiation rules, application of differentiation, antiderivatives, integrals and applications of integration. Prerequisite: Completion of MTH 167 or MTH 161/162 or equivalent with a grade of C or better. This is a Passport Transfer course.

MTH 264 - Calculus II (4 cr.)
Continues the study of calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Features instruction for mathematical, physical and engineering science programs. Prerequisite: Completion of MTH 263 or equivalent with a grade of C or better. This is a Passport Transfer course.

MTH 265 - Calculus III (4 cr.)
Focuses on extending the concepts of function, limit, continuity, derivative, integral and vector from the plane to the three dimensional space. Covers topics including vector functions, multivariate functions, partial derivatives, multiple integrals and an introduction to vector calculus. Features
MTH 267 – Differential Equations (3 cr.)
Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications and numerical methods. Prerequisite: Completion of MTH 264 or equivalent with a grade of C or better.

MTH 295 – Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

(MUS) Music

MUS 121-122 - Music Appreciation I-II (3 cr. each)
Increases the variety and depth of the student's interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional and twentieth century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Part I and II of II.

MUS 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

(NAS) Natural Sciences

NAS 101 - Natural Sciences I (4 cr.)
Presents a multidisciplinary perspective integrating the main fields of science. Emphasizes the interaction of the scientific disciplines. (Primarily for non-science majors.) Part I of II. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week. 4 credits

NAS 102 - Natural Sciences II (4 cr.)
Presents a multidisciplinary perspective integrating the main fields of science. Emphasizes the interaction of the scientific disciplines. (Primarily for non-science majors.) Part II of II. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week. 4 credits

NAS 105 - Natural Science Topics for Modern Society (3 cr.)
Emphasizes method of the scientific disciplines as applied to selected topics pertinent to modern society.

NAS 161 - Health Science I (4 cr.)
Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Part I of II.

NAS 162 - Health Science II (4 cr.)
Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Part II of II.

NAS 185 - Microbiology (4 cr.)
Surveys microorganisms, presenting their characteristic and activities as related to health and disease.

(NSG) Nursing

NSG 100 - Introduction to Nursing Concepts (4 cr.)
Introduces concepts of nursing practice and conceptual learning. Focuses on basic nursing concepts with an emphasis on safe nursing practice and the development of the nursing process. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): BIO 141 or BIO 231 or NAS 161

NSG 106 - Competencies for Nursing Practice (2 cr.)
Focuses on the application of concepts through clinical skill development. Emphasizes the use of clinical judgment in skill acquisition. Includes principles of safety, evidence-based practice, informatics and math computational skills. Prepares students to demonstrate competency in specific skills and drug dosage calculation including the integration of skills in the care of clients in simulated settings. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): MTE 1-5 and BIO 141 (or BIO 231 or NAS 161)

NSG 115 - Healthcare Concepts for Transition (4-5 cr.)
Focuses on role transition from Licensed Practical Nurse to Registered professional nurse. Incorporates concepts of nursing practice and conceptual learning to promote health and wellness across the lifespan. Uses the nursing process to explore care delivery for selected diverse populations with common and predictable illness. Emphasizes the use of clinical judgement in skill acquisition. Prerequisites: BIO 141 & BIO 142: Anatomy and Physiology I & II, ENG 111, PSY 230, SDV 100; Acceptance to the Transition Program; Co-requisites: NSG 200 Health Promotion and Assessment

NSG 130 - Professional Nursing Concepts (1 cr.)
Introduces the role of the professional nurse and fundamental concepts in professional development. Focuses on professional identity, legal/ethical issues and contemporary trends in professional nursing. Prerequisite(s): BIO 141 or BIO 231 or NAS 161

NSG 152 - Health Care Participant (3 cr.)
Focuses on the health and wellness of diverse individuals, families, and the community throughout the lifespan. Covers concepts that focus on client attributes and preferences regarding healthcare. Emphasizes population-focused care. Provides supervised learning experiences in college nursing
NSG 270 - Nursing Capstone (4 cr.)
Provides students with the opportunity to comprehensively apply and integrate learned concepts from previous nursing courses into a capstone experience. Emphasizes the mastery of patient-centered care, safety, nursing judgment, professional behaviors, informatics, quality improvement, and collaboration in the achievement of optimal outcomes of care. Provides supervised learning experiences in faculty and/or preceptor-guided college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): NSG 210 and NSG 211

(NUR) Nursing

NUR 25 - Nursing Assistant (3 cr.)
Teaches fundamentals of patient care with laboratory experience in foods and fluids, elimination, moving patients, morning, afternoon and evening care, care of hospital equipment, means of providing special comforts and safety, and admission and discharge procedures. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week. 3 credits.

NUR 27 - Nurse Aide I (3-5 cr.)
Teaches care of older patients with emphasis on the social, emotional, and spiritual needs. Covers procedures; communication and interpersonal relations; observation, charting and reporting; safety and infection control; anatomy and physiology; personal care, nutrition and patient feeding; death and dying. May include laboratory or clinical hours. Lecture 2-4 hours. Laboratory 3-9 hours. Total 6-11 hours per week. 3-5 credits.

NUR 98 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours. 1-5 credits.

NUR 100 - Introduction to Nursing and Health (2 cr.)
Introduces concepts of nursing and health. Includes historical and cultural aspects, legal, and ethical responsibilities and an overview of health and the health care delivery system.

NUR 135 - Drug Dosage Calculations (1-2 cr.)
Focuses on apothecary, metric, household conversion in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Lecture 1-2 hours per week. 1-2 credits.
NUR 193 - Studies In (1-5 cr.)
Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. Variable hours per week.

(PED) Physical Education and Recreation

PED 103 - Aerobic Fitness I (1-2 cr.)
Develops cardiovascular fitness though activities designed to elevate and sustain heart rates appropriate to age and physical condition. Part I of II.

PED 104 - Aerobic Fitness II (1-2)
Develops cardiovascular fitness though activities designed to elevate and sustain heart rates appropriate to age and physical condition. Part II of II.

PED 107 - Exercise and Nutrition I (2 cr.)
Provides for the study and application of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student’s level of fitness and wellness. Students will incorporate physical fitness and wellness into the course and daily living. A personal fitness/wellness plan is required for the 2 credit course. Part I of II.

PED 108 - Exercise and Nutrition II (2 cr.)
Provides for the study and application of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student’s level of fitness and wellness. Students will incorporate physical fitness and wellness into the course and daily living. A personal fitness/wellness plan is required for the 2 credit course. Part II of II.

PED 109 - Yoga (1-2 cr.)
Focuses on the forms of yoga training emphasizing flexibility.

PED 110 - Zumba (1-2 cr.)
Focuses on Latin rhythms, dance moves and techniques in Zumba. Utilizes physical activity, cardiovascular endurance, balance, coordination and flexibility as related to dance.

PED 111 - Weight Training I (1-2 cr.)
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Part I of II.

PED 112 - Weight Training II (1-2 cr.)
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Part II of II.

PED 117 - Fitness Walking (1 cr.)
Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level.

PED 118 - Baseball Fundamentals I (1-2 cr.)
Enhances the mental and physical ability of students for playing the sport of baseball. Introduces skills of weight training, flexibility, fielding, throwing, hitting, pitching, and position play. Explains the history of the sport and provides students an understanding of and respect for the game and its role in society.

PED 119 - Baseball Fundamentals II (1-2 cr.)
Continues to enhance the mental and physical ability of students for playing the sport of baseball. Continues to teach the skills necessary to play the sport. Provides students with the opportunity to evaluate, train, and coach players in order to enhance others’ playing abilities. Provides an understanding of the multiple processes involved in forming a baseball team.

PED 170 - Tai Chi I (1-2 cr.)
Develops an understanding of the Theories and practices of Tai Chi. Explores the energy of exercise that will tone muscles, improve circulation and increase flexibility and balance. Discusses history and philosophy of exercise and relaxation techniques for stress reduction.

PED 171 - Tai Chi II (1-2 cr.)
Develops an understanding of the Theories and practices of Tai Chi. Explores the energy of exercise that will tone muscles, improve circulation and increase flexibility and balance. Discusses history and philosophy of exercise and relaxation techniques for stress reduction.

(Phi) Philosophy

PHI 100 - Introduction to Philosophy (3 cr.)
Presents an introduction to philosophical problems and perspectives with emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values.

PHI 220 - Ethics (3 cr.)
Provides a systematic study of representative ethical systems.

PHI 226 - Social Ethics (3 cr.)
Provides a critical examination of moral problems and studies the application of ethical concepts and principles to decision-making. Topics may include abortion, capital punishment, euthanasia, man and the state, sexuality, war and peace, and selected issues of personal concern.
(PHT) Photography

PHT 100 - Introduction to Photography (3 cr.)
Introduces principles of photography with outside shooting assignments related to lecture topics.

PHT 101 - Photography I (3 cr.)
Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Part I of II.

(PHY) Physics

PHY 130 - Survey of Applied Physics (3 cr.)
Surveys topics such as heat, electricity, and light with emphasis on practical applications.

PHY 201-202 - General College Physics I-II (4 cr.)
Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. Prerequisite: MTH 161. Part I and II of II.

PHY 241-242 - University Physics I-II (4 cr. each)
Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity, and nuclear physics. Prerequisite for PHY 241—MTH 263 or MTH 173 or MTH 273 or divisional approval. Prerequisite for PHY 242—MTH 264 or MTH 174 or MTH 274 or divisional approval. Part I and II of II.

(PLS) Political Science

PLS 135 - American National Politics (3 cr.)
Teaches political institutions and processes of the national government of the United States, focuses on the Congress, presidency, and the courts, and on their inter-relationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy, and foreign relations. This is a Passport Transfer course.

PLS 211 - U.S. Government I (3 cr.)
Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Part I of II. This is a Passport Transfer course.

PLS 212 - U.S. Government II (3 cr.)
Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Part II of II.

PLS 241 - International Relations I (3 cr.)
Teaches geographic, demographic, economic, ideological, and other factors conditioning the policies of countries and discusses conflicts and their adjustment.

(PNE) Practical Nursing

PNE 135 - Maternal and Child Health Nursing (5 cr.)
Examines pregnancy, childbirth, postpartum and newborn care from a family centered approach. Covers complications related to childbearing. Emphasizes growth and development and exploration of common childhood disorders at various stages.

PNE 145 - Trends in Practical Nursing (1 cr.)
Studies the role of the Licensed Practical Nurse. Covers legal aspects, organizations, and opportunities in practical nursing. Assists students in preparation for employment.

PNE 158 - Mental Health and Psychiatric Nursing (1 cr.)
Recognizes emotional needs of patients. Provides knowledge of the role that emotions play. Enables students to understand their own behavior as well as patient behavior.

PNE 161 - Nursing in Health Changes I (6 cr.)
Focuses on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions.

PNE 162 - Nursing in Health Changes II (10 cr.)
Continues the focus on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions.

PNE 163 - Nursing in Health Changes III (9 cr.)
Continues the focus on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions.

PNE 173 - Pharmacology for Practical Nurses (2 cr.)
Studies history, classification, sources, effects, uses and legalities of drugs. Teaches problem solving skills used in medication administrations. Emphasizes major drug classes and specific agents within each class.

PNE 174 - Applied Pharmacology for Practical Nurses (2 cr.)
Applies problem solving skills in preparing and administering medications.

(PNT) Printing

PNT 110 - Survey of Reproduction Processes (3 cr.)
Presents history of printing, job safety, and career opportunities. Evaluates various printing processes including letterpress, offset, gravure, heat transfer, flexographic and screen printing.

PNT 130 - Applied Math for the Graphics Industry (3 cr.)
Presents math skills as it relates to the graphics industry. Students will develop the computational skills necessary to prepare illustrations and photographs, computer page layouts, calculate paper stock and ink needs.

PNT 131 - Principles of Lithography I (4 cr.)
Presents principles of lithography printing, its safety practices and equipment operation. Covers job planning,
copy preparation, stripping, presensitized plates, small press operation, ink, paper handling, finishing operations.

PNT 135 - Print Imaging (2 cr.)
Introduces the student to graphic imaging as it relates to the printing industry. Includes capturing and reproduction of line art, line copy and continuous tone by conventional and electronic methods.

PNT 141 - Printing Applications I (3 cr.)
Provides instruction in the production of college-related publications and print shop management. Provides classroom and laboratory experiences in photography, layout and design, copy preparation, presswork, inventory control and production management. Part I of I.

PNT 142 - Printing Applications II (3 cr.)
Provides instruction in the production of college-related publications and print shop management. Provides classroom and laboratory experiences in photography, layout and design, copy preparation, presswork, inventory control and production management. Part II of II.

PNT 211 - Electronic Publishing I (3 cr.)
Teaches principles of typography and graphics, word processing and page layout. Survey of electronic publishing, hardware systems, peripherals, laser printers and imagesetters. Uses microcomputers to achieve a high degree of proficiency in completing a variety of laboratory projects. Prerequisite: PNT 131; Co-Requisites: PNT 221-222-223 or departmental approval.

PNT 221 - Layout and Design I (3 cr.)
Analyzes production art necessary to prepare camera-ready copy for photomechanical printing. Teaches basic drawing concepts and techniques with emphasis on design principles, and care and use of instruments. Studies production methods to prepare ruled forms, overlays, bendays, bleeds, two and multicolor forms for advertising and publication work.

PNT 222 - Layout and Design II (3 cr.)
Analyzes production art necessary to prepare camera-ready copy for photomechanical printing. Teaches basic drawing concepts and techniques with emphasis on design principles, and care and use of instruments. Studies production methods to prepare ruled forms, overlays, bendays, bleeds, two and multicolor forms for advertising and publication work.

PNT 231 - Lithographic Chemistry (2 cr.)
Introduces chemistry and how it involves the printer. Covers the role of water in lithography, pH of solutions, plate coatings and film emulsions. Studies relationships of paper and ink, emulsification, waterlogging, effect of humidity, and causes and control of static electricity.

PNT 241 - Advanced Printing Applications (3 cr.)
Continues PNT 141 to provide additional experience in production and shop management.

PNT 245 - Production Planning and Estimating (4 cr.)
Teaches theory and gives experience in planning and quality control for printing production. Includes printing plant supervision and management techniques, organization, maintenance and inventory control systems. Discusses estimating for printing, including job layout, purchasing, pricing and trade customs.

PNT 251 - Offset Press Operations I-II (4 cr.)
Explains procedures for practical operation of offset equipment including adjustments, setup make-ready, and imposition for single-color and multi-color production jobs. Studies feeder registration, printing and delivery systems, roller and blanket problems, ink and dampening problems, and quality control. Part I and II of II.

PNT 260 - Color Separation (3 cr.)
Introduces study of color theories and principles as they apply to process color printing. Provides classroom and laboratory experiences in dot gain, densitometry, creation and manipulation of color images and electronic color separation. Prerequisites: PNT 132, PNT 135.

PNT 265 - Digital Imaging Applications (4 cr.)
Provides an introduction to the proper use of software for production purposes. Covers design software for page layout and composition, image manipulation and creation, drawing and illustration.

PNT 298 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(PSY) Psychology

PSY 126 - Psychology for Business and Industry (3 cr.)
Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employee-employer relationship, interpersonal communications. May include techniques for selection and supervision of personnel.

PSY 200 - Principles of Psychology (3 cr.)
Surveys the basic concepts of psychology. Covers the scientific study of behavior and mental processes, research methods and measurement, theoretical perspectives, and application. Includes biological bases of behavior, learning, social interactions, memory, and personality; and other topics such as sensation, perception, consciousness, thinking, intelligence, language, motivation, emotion, health, development, psychological disorders, and therapy. Readiness to enroll in English 111 required. This is a Passport Transfer course.

PSY 201-202 - Introduction to Psychology I-II (3 cr. each)
Examines human and animal behavior, relating experimental

Course Descriptions • 215
studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Part I and II of II.

PSY 215 - Abnormal Psychology (3 cr.)
Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. Prerequisite PSY 200, 201, or 202.

PSY 230 - Developmental Psychology (3 cr.)
Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person's physical, cognitive, and psychosocial growth. Lecture 3 hours per week. 3 credits.

PSY 235 - Child Psychology (3 cr.)
Studies development of the child from conception to adolescence. Investigates physical, intellectual, social and emotional factors involved in the child's growth.

PSY 255 - Psychological Aspects of Criminal Behavior (3 cr.)
Studies psychology of criminal behavior. Includes topics such as violent and non-violent crime, sexual offenses, insanity, addiction, white collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. Prerequisites: PSY 125, 200, 201, 202 or divisional approval.

(REL) Religion

REL 200 - Survey of the Old Testament (3 cr.)
Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings.

REL 210 - Survey of the New Testament (3 cr.)
Surveys books of the New Testament, with special attention upon placing the writings within their historical and geographical setting.

REL 230 - Religions of the World (3 cr.)
Introduces the religions of the world with attention to origin, history, and doctrine.

REL 240 - Religions in America (3 cr.)
Surveys various manifestations of religion in the American experience. Emphasizes concepts, problems, and issues of religious pluralism and character of American religious life.

(RTH) Respiratory Therapy

RTH 102 - Integrated Sciences for Respiratory Care II (3 cr.)
Integrates the concepts of mathematics, chemistry, physics, microbiology, and computer technology as these sciences apply to the practices of respiratory care.

RTH 110 - Fund. Theory and Procedures for Respiratory Care (4 cr.)
Focuses on the development of basic respiratory care skills necessary to enter the hospital environment. This is a first semester course that requires acceptance into the Respiratory Therapy program.

RTH 112 - Pathology of the Cardiopulmonary System (3 cr.)
Presents pathophysiology of medical and surgical diseases with emphasis upon diseases of cardiopulmonary system.

RTH 113 - Pathophysiology of the Cardiopulmonary System (4 cr.)
Presents pathophysiology of medical and surgical diseases with emphasis upon diseases of the cardiopulmonary system. Includes the development of diagnostic skills.

RTH 121 - Cardiopulmonary Science I (3 cr.)
Focuses on pathophysiology, assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology and patho-physiology.

RTH 131 - Respiratory Care Theory and Procedures I (4 cr.)
Presents theory of equipment and procedures and related concepts used for patients requiring general, acute and critical cardiopulmonary care. Part I of II.

RTH 132 - Respiratory Care Theory and Procedures II (4 cr.)
Presents theory of equipment and procedures and related concepts used for patients requiring general, acute and critical cardiopulmonary care. Part II of II.

RTH 135 - Diagnostic and Therapeutic Procedures I (2 cr.)
Focuses on purpose, implementation and evaluation of equipment, and procedures used in the diagnosis and therapeutic management of patients with cardiopulmonary disease.

RTH 145 - Pharmacology for Respiratory Care I (1 cr.)
Presents selection criteria for the use of, and detailed information on pharmacologic agents used in pulmonary care.

RTH 190 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

RTH 199 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

RTH 215 - Pulmonary Rehabilitation (1 cr.)
Focuses on purpose and implementation of comprehensive pulmonary rehabilitation program.
RTH 222 - Cardiopulmonary Science II (3 cr.)
Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal, and neuromuscular physiology, and pathophysiology.

RTH 223 - Cardiopulmonary Science III (2 cr.)
Continues the exploration of topics discussed in RTH 121 and 222.

RTH 226 - Theory of Neonatal and Pediatric Respiratory Care (2 cr.)
Focuses on cardiopulmonary physiology and pathology of the newborn and pediatric patient.

RTH 227 - Integrated Respiratory Therapy Skills II (2 cr.)
Presents intensive correlation of all major respiratory therapy subject areas reflecting the entry-level and advanced practitioner matrices. Emphasizes assessment, implementation, and modification of therapy to patient response.

RTH 236 - Critical Care Monitoring (3 cr.)
Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient, especially arterial blood gases and hemodynamic measurements. Explores physiologic effects of advanced mechanical ventilation.

RTH 265 - Current Issues in Respiratory Care (2 cr.)
Explores current issues affecting the profession of respiratory care.

RTH 290 - Coordinated Internship (1-5 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

RTH 299 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

(SAF) Safety

SAF 120 - Safety & Health Standards: Regulations and Codes (3 cr.)
Teaches development of safety standards, the Occupational Safety and Health Act (OSHA), its rules and regulations; penalties for non-compliance, and methods of compliance. Includes an examination of Government Regulatory Codes and appraisal of consensus, advisory, and proprietary standards.

SAF 126 - Principles of Industrial Safety (3 cr.)
Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion.

SAF 130 - Industrial Safety - OSHA 10 (1 cr.)
Presents an introduction to occupational health and safety and its application in the workplace. Emphasizes safety standards and the Occupational Safety and Health Act (OSHA), its rules and regulations (OSHA 10).

(SDV) Student Development

SDV 100 - College Success Skills (1-3 cr.)
Assists students in transition to colleges. Provides overviews of college policies, procedures, curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. May include English and Math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1-3 hours per week. 1-3 credits.

SDV 101 - Orientation to College (1 cr.)
Introduces students to the skills which are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center; counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline.

SDV 106 - Preparation for Employment (1 cr.)
Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search.

SDV 108 - College Survival Skills (1 cr.)
Provides an orientation to the college. Introduces study skills, career and life planning. Offers an opportunity to engage in activities aimed at self-discovery. Emphasizes development of “coping skills” such as listening, interpersonal relations, competence, and improved self-concept. Recommended for students enrolled in developmental courses.

SDV 110 - Orientation to Teaching As a Profession (3 cr.)
Introduces students to a career in teaching and education by allowing students to experience the components of the learner, the school environment and the classroom teaching environment. Utilizes the Virginia Teachers for Tomorrow/Teacher Cadet curriculum. Students participate in a 15-hour student teaching internship in a classroom at one of the levels between Kindergarten and grade 9.
SDV 195 - Topics In (1-5 cr.)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

SDV 198 - Seminar and Project (1-5 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(SOC) Sociology

SOC 200 - Principles of Sociology (3 cr.)
Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions.

SOC 201-202 - Introduction to Sociology I-II (3 cr. each)
Introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, stratification, deviance, culture, community studies. Includes population, social change, and social institutions (family, education, religion, political system, economic system). Part I and II of II.

SOC 215 - Sociology of the Family (3 cr.)
Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, alternative lifestyles.

SOC 235 - Juvenile Delinquency (3 cr.)
Studies demographic trends, casual theories, and control of juvenile delinquency. Presents juveniles' interaction with family, schools, police, courts, treatment programs, and facilities. Also approved for ADJ Juvenile curriculum.

SOC 236 - Criminology (3 cr.)
Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces role of police, judicial and correctional system in treatment and punishment of offenders. Is also approved for ADJ Criminology. Lecture 3 hours per week. 3 credits.

SOC 268 - Social Problems (3 cr.)
Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars, and disarmament.

(SPA) Spanish

SPA 101 - Beginning Spanish I (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. May include an additional hour of oral drill and practice per week. Part I of II.

SPA 102 - Beginning Spanish II (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. May include an additional hour of oral drill and practice per week. Part II of II.

SPA 103-104 - Basic Spoken Spanish I-II (3 cr. each)
Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Part I and II of II.

SPA 201 - Intermediate Spanish (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. Prerequisite SPA 102 or equivalent. May include oral drill and practice. Part I of II.

SPA 203 - Intermediate Spanish I-II (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. Classes conducted in Spanish. Prerequisite SPA 102 or equivalent. May include oral drill and practice. Part I of II.

SPA 204 - Intermediate Spanish I-II (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. Classes conducted in Spanish. Prerequisite SPA 102 or equivalent. May include oral drill and practice. Part II of II.

(UMS) Unmanned Systems

UMS 107 - Small Unmanned Aircraft Systems (sUAS) Remote Pilot Ground School (2 cr.)
Presents the aeronautical knowledge required for FAA approved commercial operations as a Remote Pilot with small Unmanned Aircraft Systems (sUAS) rating. Covers the regulations applicable to small UAS operations, loading and performance, emergency procedures, crew resource management, determining the performance of the small unmanned aircraft, and maintenance/inspection procedures. Prepares students for the FAA written examination required to obtain the Remote Pilot certificate.

UMS 111 - Small Unmanned Aircraft Systems (sUAS) I (3 cr.)
Introduces students to the history of small Unmanned Aerial Systems (sUAS), surveys current platforms, applications, components, and sensors. Covers the theory of flight, operations, manual flight, maintenance, and required record keeping. Introduces mission planning, crew management, and autonomous control. Emphasizes the ethical, legal, and safe use of sUAS.
UMS 112 - Small Unmanned Aircraft Systems (sUAS) Program and Flight Data Management (3 cr.)
Provides an introduction to drone programming and flight data management, archiving and manipulation of data in addition to report generation. Covers programming topics and logic design concepts including the use of applications that are designed to manipulate data retrieved from the drone.

UMS 177 - Small Unmanned Aircraft Systems (sUAS) Components and Maintenance (3 cr.)
Provides an introduction to the basic equipment and techniques used in maintaining, repairing, and upgrading sUAS to assure airworthiness and proper operation of the other components. Emphasizes safe practices in repair and handling of components and develops fundamental skills in troubleshooting/repair of the circuits, subsystems and components typically found in the complete sUAS. Covers payload sensor mounting, power management and security threat management.

UMS 211 - Small Unmanned Aircraft Systems (sUAS) II (3 cr.)
Focuses on advanced Unmanned Aircraft System (UAS) mission planning and operation of small Unmanned Aerial Systems (sUAS). Covers mission planning, operations, communications, autonomous flights, ground control station operations, crew management, emergency procedures, safety/air vehicle pilot checklist procedures, sensor selection, data collection and analysis. Examines advanced coverage of maintenance, operations support, and introduces geospatial product workflow. Emphasizes the ethical, legal, and safe use of sUAS.

(WEL) Welding

WEL 31 - Introductory Gas Tungsten Arc Welding (2 cr.)
Introduces practical operations in use of tungsten arc welding and equipment, operations, safety practices in various positions, shielding gases, filler rods, process variations, and their applications.

WEL 32 – Introduction to Gas METAL Arc Welding (2 cr.)
Introduces practical operations in use of gas metal arc welding and equipment, operations safety practices in various positions, shielding gases, filler rods, process variations, and their applications.

WEL 120 - Introduction to Welding (2 cr.)
Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment.

WEL 121 - Arc Welding (2 cr.)
Studies the operation of AC and DC power sources, weld heat, polarities, and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures.

WEL 122 - Welding II (Electric Arc) (2 cr.)
Teaches electric arc welding, including types of equipment, selection of electrodes, safety equipment and procedures, and principles and practices of welding.

WEL 126 - Pipe Welding I (3 cr.)
Teaches metal arc welding processes including the welding of pressure piping in the horizontal, vertical, and horizontal-fixed positions in accordance with section IX of the ASME code.

WEL 138 - Pipe and Tube Welding (2 cr.)
Develops entry level skills for the inert gas tungsten welding process (TIG) with emphasis upon thin and thick wall carbon and stainless piping and tubing. Prerequisite: WEL 136.

WEL 145 - Welding Metallurgy (3 cr.)
Studies steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic and fluorescent testing.

WEL 150 - Welding Drawing and Interpretation (3 cr.)
Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols.

WEL 160 - Gas Metal Arc Welding (4 cr.)
Introduces semi-automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes, and gases.

WEL 164 – Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG) (3 cr.)
Introduces practical operations in the use of tungsten arc welding and equipment. Studies equipment operation setup, safety, and practice of Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG).

WEL 199 - Supervised Study (1-5 cr.)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

WEL 233 - Gas Metal Arc Welding (GMAW) Aluminum (2 cr.)
Examines the use of the Gas Metal Arc Welding (GMAW) process of welding aluminum. Focuses on welding aluminum projects in various weld joint configurations and in all welding positions.

WEL 237 - Applied Welding Process (3 cr.)
Studies advanced welding applications for various materials, advanced welding skills and fabrication equipment.
Examines materials to be welded such as stainless steel and aluminum, choosing the proper welding process such as advanced Gas Tungsten Arc Welding (GTAW)-Aluminum, Gas Metal Arc Welding (GMAW)-Aluminum and Shielded Metal Arc Welding (SMAW), developing the appropriate welding procedure for the materials chosen and successfully completing a capstone project for the entire course of study.

WEL 238 - Gas Tungsten Arc Welding (GTAW) Aluminum (2 cr.)
Examines the use of the Gas Tungsten Arc Welding (GTAW) process in welding aluminum. Focuses on practice welding aluminum projects in various weld joint configurations and in all welding positions.

WEL 241 - Robotic Welding I (2 cr.)
Examines safety, setup, programming, and operation of a welding robot. Covers variables and problems in addition to solutions applied to provide a practical and efficient application of the Gas Metal Arc Welding (GMAW) process to an automated system. (Part I of II).

WEL 242 - Robotics Welding II (2 cr.)
Incorporates skills learned in Robotic Welding I into simulating projects used in industry. Focuses on Gas Metal Arc Welding (GMAW) processes used to create weldments taken from industry drawings and blueprints. (Part II of II) WEL 241.

WEL 244 - Weld Testing and Codes (2 cr.)
Covers non-destructive (NDT) weld testing and how it plays a critical role in assuring that structural components and materials meet specified requirements. Examines how and why these NDT processes are used and will use them to test welds and weldments.

WEL 247 - Welding Layout and Fabrication I (2 cr.)
Introduces student to project layout from shop sketches/blueprints, developing templates/patterns and the use of fabrication tools. Covers the safe operation of different types of manual metal fabrication equipment used in the industry. Examines safe and efficient use of the manual metal shear, metal roller, metal break and other fabrication. (Part I of II).

WEL 248 - Welding Layout and Fabrication II (2 cr.)
Applies previously learned skills from Welding and Fabrication I in a job-simulated situation. Focuses on pipe, structural steel and other weldments that will be fabricated using all available equipment and welding processes. Covers job site type blueprints and drawings used in fabrication. Incorporates American Welding Society (AWS) visual inspection, weld measurements and codes. (Part II of II) WEL 247.

Personnel

FACULTY & ADMINISTRATION

Amos, Carl
Professor/Accessible Services Coordinator
B.A. – Frostburg State University, 1973
M.A. – New York University, 1980
Ed.D. – Lamar University, 2000
Certified Mental Health First Aid, 2016

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Diploma – Automotive Diagnosis and Repair – Danville Community College, 1977
A.S. – Automotive Technologies – Tidewater Community College, 1987
A.A.S. – Education – Patrick Henry Community College, 1977
B.S. – Virginia Tech, Education, 1997

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Ph.D. – Virginia Tech, 2000

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A.A.S. – Danville Community College, 1996
B.S. – Averett College, 1998
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BSN – Old Dominion University, 2013
MSN – Chamberlain College of Nursing, 2017

Continued on next page
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A.A.S. – Danville Community College, 1995
B.S. – Old Dominion University, 1999
A.A.S. – Danville Community College, 2000
M.S. – Old Dominion University, 2009
Microsoft Certified Systems Engineer, 2001
Cisco Certified Network Associate (CCNA), 2001
Cisco Certified Academy Instructor (CCAI), 2001
FAA Certified Remote Pilot (UAS), 2017
Cisco Certified Cyber Operation Center Instructor, 2018

Chhajer, Mukesh
Professor of Physics and Mathematics
B.S. – Birla Institute of Technology and Science, 1983
M.S. – University of Cincinnati, 1992
Ph.D. – University of Akron, 1998

Cornell, Pamela G.
Associate Professor of Nursing
Diploma – RN – Danville Regional Medical Center School of Nursing, 1996
BSN – Liberty University, 2013
MSN – Liberty University, 2016

Cottrill, Bruce
Associate Vice President of Human Resources
B.A. - West Virginia University
MSIR - West Virginia University, 2004

Daniel, Traci M.
Assistant Professor and Director of Early Childhood Education
A.A.S. – Danville Community College, 2004
B.A. – Mary Baldwin College, 2009
M.Ed. – Liberty University, 2010
Certified Human Development and Family Studies (CFCS-HDFS), 2016

Distad, Joseph C.
Assistant Professor of Precision Machining Technology
Diploma, Precision Machining Technology – Danville Community College

Drinkard, Dewitt T.
Associate Professor of Psychology
B.A. – Emory & Henry College, 1974
M.Ed. – East Tennessee State University, 1993
M.S. – Virginia Commonwealth University, 2000

Dunn, Mary
Nursing Instructor
MSN, University of Virginia, 1986

Ford, Christopher
Director of Learning Resources Center and Distance Education
B.A. – Averett College, 1999
M.A. – Old Dominion University, 2002
Teacher’s License, 2005
M.S.L.I.S. – Clarion University, 2010
Library Media Specialist Certificate, 2012

Fox, Paul C.
Dean of Arts, Sciences and Business, Professor of Chemistry
B.Sc. – University of Bath, 1980
Ph.D. – University of Leeds, 1984

Gill Powell, Jacqueline
President
BS – Texas A&T University  1989
MSW - University of Texas at Arlington 1998
ED D Texas A&M University  2011

Goble, Rosanne
Assistant Professor of Biology
A.A. – Southeastern Community College, 1996
B.S. – Western Illinois University, 1998
M.S. – Western Illinois University, 2004

Goodman, Jennifer L.
Instructor of Nursing
Diploma RN – Danville Regional Medical Center School of Nursing, 1996
BSN – University of North Carolina Greensboro, 2015
MSN – Liberty University, 2018

Gott, Sherry
Associate Professor of English
B.A. – Virginia Polytechnic Institute and State University, 1973
M.A. – Virginia Polytechnic Institute and State University, 1976

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Graves, Howard A.
Assistant Professor and Coordinator of Counseling
Deputy Title IX Coordinator
B. S. – Norfolk State College, 1976
M.Ed. – Coppin State College, 1977

Hair, Shannon
Vice President of Institutional Advancement and Development
A.A.S. – Danville Community College, 1998
B.S. – Old Dominion University, 2005
Virginia Industrial Development Authority Institute – Virginia Tech, 2006
Economic Development Institute (EDI) – Oklahoma University, 2007
M.A. – University of Nebraska, 2017

Hardy, Dylan
Coordinator, Lab Technician CNC Precision Machining Flow Cell Technology
Diploma – Precision Machining Technology – Danville Community College, 2015

Hardy, John Herbert
Welding Instructor
Certified Welding Educator – American Welding Society
Certified Welding Inspector – American Welding Society

Harris, Sharon M.
Project Director of Southern Piedmont Educational Opportunity Center (EOC)
B.B.A. – James Madison University, 1991
M.B.A. – Virginia Polytechnic Institute & State University, 2005

Hatcher, Christy S.
Assistant Professor of Developmental Mathematics
B.S. – Averett College, 1997
M.S. – Longwood University, 2002
M.ED – Averett University, 2003

Hawker, Teresa
Assistant Professor of Electrical/Electronics

Henderson, Deborah H.
Associate Professor of Nursing
B.S.N. – University of Virginia, 1978
M.S.N. – Duke University, 2000

Holley, Debra
Vice President for Academic and Student Affairs
B.S. – East Carolina University, 1986
M.S. – East Carolina University, 1989
Ed.D. – Nova Southeastern University, 2012

Keatts, John C.
Welding Instructor
Graduate of Apprenticeship - International Brotherhood of Boilermakers Apprenticeship 2009

Maier, Theodore J.
Professor of English and Spanish
B.S. – State University of New York, College at Brockport, British and American Literature, 1984
M.A. – State University of New York, College at Brockport, British and American Literature, with emphasis in Creative Writing, 1989
Permanent, New York State Teaching Certification, Secondary English, 1989.
Ph.D. – Miami University of Ohio, 2001

McDowell, Joshua R.
Assistant Professor of Precision Machining Technology
Diploma – Danville Community College, 2007
A.A.S. Engineering – Danville Community College, 2009
Journeyman Machinist 2011

Mitchell, Robin.
Instructor of Dental Hygiene
B.S. - Old Dominion University, 2006
A.S. - Danville Community College, 1987

Motley, Mary W.
Instructor of Developmental Mathematics
A.A.S – Danville Community College, 1989
B. S. – Averett College, 1994
M.Ed. – Averett University, 2003

Nidiffer, Matt B.
Assistant Professor of Business Management
B.S. – The University of Virginia’s College at Wise, 2002
M.S. – Clemson University, 2006

O’Neil, Faith M.
Director of Public Relations and Marketing
B.S. – Communications – Old Dominion University, 2016
MBA – Liberty University, 2018

Poole, Kevin D.
Associate Professor
Diploma – Precision Machining Technology, Danville Community College, 2003

Continued on next page
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Potter, Cory A.
Director of Institutional Planning, Effectiveness, and Research
B.S. – University of Texas Southwestern Medical Center, 1993
M.A. – Liberty University, 2009
M.Div. – Liberty University Baptist Theological Seminary, 2014
Ed.S. – University of West Florida, 2017

Prillaman, Brad
Instructor of Developmental Mathematics
B.S. – Averett University, 2005
M.Ed. – Averett University, 2011

Pulliam, Cathy D.
Coordinator of Admissions, Enrollment Management, and Student Outreach
Certificate – Danville Community College, 1999
B.S. – Averett University, 2002
M.S. Ed. – Capella University, 2007

Riddle, Tamra R.
Associate Professor of Nursing
Registered Nurse – The Memorial Hospital School of Nursing, 1989
Certification in Inpatient Obstetrics – National Certification Corporation, 1995
B.S.N. – Old Dominion University, 1997
M.S.N. – Education, Liberty University, 2012

Robertson, Richie Jones
Associate Professor of Administrative Support Technology
B.A. – Averett College, 1986
MBA – Averett University, 2009
Microsoft Office Specialist – Word, 2015

Robertson, Timothy
Coordinator – Lab Technician CNC Precision Machining Flow Cell Technology
Diploma – Danville Community College, 2012
A.A.&S. – Danville Community College, 2009

Roche, William J., Jr.
Professor of Automotive Analysis and Repair
Diploma – Blue Ridge Community College, 1976
B.S. – University of Maryland, 1981
M.S. – Old Dominion University, 2001

Ruiz-Fodor, Ana M.
Associate Professor of History
B.S. – Universidad Centroamericana, 1989
M.S. – West Virginia University, 1999, 2005
Ph.D. – Northcentral University, 2017

Russell, Jermyn L.
Professor of Cosmetology
B.A. – Grace Bible and Seminary College, 2016

Sallah, Neil
Professor of Engineering
M.S. – Tennessee Technological University, 1987
Ph.D. – Tennessee Technological University, 1990

Sanders, Todd R.
Assistant Professor of Precision Machining Technology
Diploma – Precision Machining Technology – Danville Community College, 1985

Sherman, Willie C.
Instructor of Business Management
B.S. – Jacksonville State University, 1979
M.Div. –Virginia Union University, 1999
D. Ministry – Virginia University of Lynchburg, 2005

Soyars, James W.
Associate Professor of Utilities and Substation Technologies
Diploma – Electrical Installation & Maintenance - Rockingham Community College, 1988
B.S. – Engineering Technology - Western Carolina University, 2004
Siemens Certified Mechatronics Instructor Levels 1, 2, &3 – Siemens in Berlin, 2017

Stoddard, Jonathan M.
Professor of Chemistry
B.S. – San Jose State University, 1991
Ph.D. – University of California, Irvine, 2003

Taylor, Vickie Holland
Assistant Professor of Sociology
B.S. – Appalachian State University, 1970
M.A. – Appalachian State University, 1971

Terry, Cheryl
Dean, Division of Student Success and Academic Advancement
B.S. – DeVry University, 1988
MBA – University of Dallas, 2001

Terzopoulos, Constantine
Associate Professor of Mathematics
B.S. – Empire State College – SUNY, 1988
M.S. – The City College – CUNY, 1989
M.A. – Hunter College – CUNY, 1994

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Assistant Vice President Workforce Services
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A.S. – Wytheville Community College, 1969
B.S. – Virginia Polytechnic Institute and State University, 1971
M.S. – Virginia Polytechnic Institute and State University, 1979

Toothman, Charles A.
Vice President of Financial & Administrative Services
B.S. – Fairmont State University, 1988
MBA – Averett University, 2007

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Librarian – Instruction & E-Resources
B.A. – Ashbury College, 1988
MLS – University of Maryland, College Park, 1990
Certificate in Library Services in Distance Education – UMUC, 2005

Wilborne, Linda N.
Associate Professor of Business Management
A.A.S. – Danville Community College, 2002
B.B.A. – Averett University, 2004
M.B.A. – Averett University, 2006

Wilson, Rosa
Associate Professor
A.A.S. – Patrick Henry Community College, 1994
BSN, Old Dominion University, 2005

Williams, Jeremiah K.
Director, CNC Precision Machining Flow Cell Technology
Diploma – Danville Community College, 2012

Worthley, Joshua T.
Instructor of Dimensional Metrology
A.S. – Southeast Technical Institute, 2010
A.S. – Southeast Technical Institute, 2010
A.S. – Southeast Technical Institute, 2010
A.S. – Western Iowa Technical Community College, 2017
ASQ Certified Quality Improvement Associate, 2012
ASQ Certified Quality Process Analyst, 2013
ASQ Certified Quality Inspector, 2013
ASQ Certified Quality Technician, 2014

Wright, Sheila G.
Professor of Graphic Imaging Technology
Diploma – Danville Community College, 1978
B.S. – Averett College, 1992
M.S. – North Carolina A&T State University, 1994

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Education Administrator II/Integrated Technology
Diploma – Danville Community College, 1995

Blanks, Benjamin
Library Specialist II
BA Lynchburg College – 2011
Master – North Carolina Central University – 2013

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Administrative & Office Specialist III, Business Office
A.A.S. – Danville Community College, 1977

Cain J ohnson, Carsheena
Educ support spec. III
BS – Saint Augustine’s University 1989

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Information Technology Manager
A.A.S. – Danville Community College, 1996
A.A.S. – Danville Community College, 1998

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Administrative and Office Specialist III, Maintenance
A.A.S. – Danville Community College, 1997

Cole, Michele
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A.A.S. – Danville Community College, 2004
B.A. – Mary Baldwin College, 2001

Coleman, Doreen B.
TRIO EOC Education Specialist/Tech Support
A.A.S. – Danville Community College, 1981
A.A.S. – Danville Community College, 2008
B.B.A. – Averett University, 2010

Combs, Nancy
Executive Assistant to the Vice President of Finance and Administrative Services
B.B.A. – Averett University

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Day, Dennis
Trades Technician III, Maintenance
Continued from previous page

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A.A.S – Danville Community College, 2004
B.A. – University of Richmond, 2009

Elgin, Megan E.
*Student Success Coach*
A.A.S. – Danville Community College, 2015
B.A. – University of Virginia, 2017
Virginia Career Coach Certification

Falls, Edward Lee
*Trades Technician III, Maintenance*

Gatewood, Kevin E.
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A.A.S. – Danville Community College, 2013
B.S. – Virginia Tech, 2016

George, Mary B.
*Administrative and Office Specialist III, Financial Aid Office*
A.A.S. – Danville Community College, 2006

Graves, McKenly
*Information Technology Specialist I*
A.A.S. – Danville Community College, 2001

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*Administrative and Office Specialist III*
Danville Community College Educational Foundation
A.A.S. – Danville Community College, 2002
B.S. – Bluefield College, 2004
M.B.A. – Averett University, 2008

Howard, Violetta
.Library Specialist I*
Tutoring Center Coordinator

Jennings, Jay
*Physical Plant Facilities Manager*
BA - Virginia Polytechnic Institute & State University 2003

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*General Administration Manager I, Business Office*
B.B.A. – North Carolina Central University, 1984
MBA – Averett University, 1992

Jones, Charles B.
*Information Technology Specialist II*
A.A.S. – Danville Community College, 1993
B.S.B.A. – Longwood College, 1995

Jordan, Andre
*Retail Manager, Danville Community College Bookstore*
Diploma – Computer Learning Center, 1982

Lewis, Jennifer
*Administrative and Office Specialist III, Bookstore*
A.A.S. – American National University, 2011

Lunsford, Letitia A.
*Library Specialist I*
Testing Center Coordinator
B.S. – Averett University, 1980
A.A.S. – Danville Community College, 2001
M.Ed. – Averett University, 2007

Lutz, Christie S.
*Administrative and Office Specialist III, Division of Arts, Sciences, and Business*
A.A.S. – Danville Community College, 2004
B.B.A. – Averett University, 2009

Marshall, Chris
*Information Technology Specialist I*
A.A.S. – Danville Community College, 1998

Moore, Casey
*Assistant Enrollment Navigator*

Nichols, Justin S.
*Research Analyst and Assessment Coordinator*
A.A.S. – IST: PC Technology Specialization, Danville Community College, 2016
A.A.S. – IST: Network Engineer, Danville Community College, 2017
Microsoft Technology Associate (MTA), 2016
CSC – PC Upgrade and Repair, Danville Community College, 2016
CSC – Network Technology, Danville Community College, 2017
CSC – Networking with CISCO/CCNA, Danville Community College, 2017

Oakes, Richard A.
*Trades Technician III, Maintenance*

Olp, Charles J., Jr.
*Learning Specialist I*
A.A.S. – Danville Community College, 2011
B.S. – James Madison University, 2013

Owen, Julie M.
*Student Success Coach*
B.S. – East Tennessee State University, 1998
MBA – Averett University, 2006
Virginia Career Coach Certification

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Director, TARE Program
B.S. – Virginia State University, 1976 Year of Graduation

Purnell, Penny H.
Administrative and Office Specialist III
A.A.S. – Danville Community College, 2006

Rigney, April
Financial Services Specialist I
AAS – Patrick Henry Community College 2014
BA - Averett University - 2017

Roach, Bobby Allen
Public Relations & Marketing Specialist III
A.A.S. – Liberal Arts, Humanities Specialization – Danville Community College, 2009
B.A. – Communication Studies & Journalism – Averett University, 2012
MBA – Marketing Specialization – Averett University, 2016

Rutledge, Mark R.
Information Technology Specialist I
Admissions & Records
A.A.S. – Danville Community College, 2012
B.S. – Radford University, 2016

Sizemore, Sue S.
Administrative & Office Specialist III, Workforce Services
A.A.S. – Danville Community College, 2006

Snead, Mona L.
Administrative & Office Specialist III, Financial Aid Office
A.A. – Business Management-Danville Community College, 2013
B.S. – Business Administration, 2015

Staten, Karl
High School Career Coach
B.A. – Norfolk State University, 2009
M.A. – Norfolk State University, 2012

Tarpley, Ola H.
Administrative and Office Specialist III/Grants Accountant, Business Office
A.A.S – Danville Community College, 2007

Taylor, Ann H.
HR Analyst I
Certificate – Danville Community College, 1977
B.S. – Averett College, 1996
SHRM-CP, 2006

Thorton, Evonda W.
Education Support Specialist III, Office of Admissions
A.A.S. – Danville Community College, 1996

Townes, Kamesha
Financial Aid Support Specialist I
AAS – Danville Community College 2016
BA - Bellevue University - 2018

Turner, Angela
Financial Aid Director
A.A.S. – Danville Community College, 1996
B.A. – Averett College, 2001
M.S. in Higher Education – Walden University, 2015

Walker, Alice C.
Financial Services Specialist I, Business Office
A.A.S. – Accounting – Danville Community College, 1982
A.A.S. – Business Management – Danville Community College, 1982
B.B.A. – Business Administration – Averett University, 1996

Wann, Connie P.
Executive Assistant to the President
Certificate – Danville Community College, 1971
A.A.S. – Danville Community College, 2003

Whitt, Ruth
Procurement Officer I
Certificate – Danville Community College, 1979
Certified Purchasing Manager, 2001
A.A.S. – Danville Community College, 2003
Certified Virginia Contracting Officer, 2004

Williams, Jazzmine
Enrollment Navigator
B.S. – Old Dominion University, 2013

Wyatt, Teresa
Administrative and Office Specialist III, Arts, Sciences, and Business Division
A.A.S. – Danville Community College, 2001

Younger, Camille S.
TRiO EOC Education Specialist
B.B.A. – Averett University, 2010
MBA – Averett University, 2017

Younger, Chadrick L.
Workforce Career Coach
B.A. – George Mason University, 2000
M.A – Liberty University, 2012