

TECHNICAL & VOCATIONAL PROGRAMS

Computer Programming

A 25 13 0 Associate in Applied Science

The Computer Programming curriculum prepares individuals for employment as computer programmers and related positions through study and applications in computer concepts, logic, programming procedures, languages, generators, operating systems, networking, data management, and business operations. Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands on training in programming and related computer areas that provide the ability to adapt as systems evolve. Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems.

General Education Courses

| | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
|--|-----------------------|------------|--------------|------------|----------------|
| <i>Communications</i> | | | | | |
| ENG 111 Expository Writing | [ENG 090/RED 090] | F1 | 3 | 0 | 3 |
| ENG 111A Expository Writing Lab | [Coreq. - ENG 111] | F1 | 0 | 1 | 1 |
| <i>Choose one of the following:</i> | | | | | |
| ENG 112 Argument Based Research | [ENG 111] | S1 | 3 | 0 | 3 |
| or | | | | | |
| ENG 113 Literature Based Research | [ENG 111] | S1 | 3 | 0 | 3 |
| or | | | | | |
| ENG 114 Professional Research & Reporting | [ENG 111] | S1 | 3 | 0 | 3 |
| <i>Choose one of the following:</i> | | | | | |
| COM 110 Introduction to Communications | [ENG 090/RED 090] | S1 | 3 | 0 | 3 |
| or | | | | | |
| COM 120 Interpersonal Communication | [ENG 090/RED 090] | S1 | 3 | 0 | 3 |
| or | | | | | |
| COM 231 Public Speaking | [ENG 111] | S1 | 3 | 0 | 3 |
| | | | | | |
| <i>Natural Science/Mathematics</i> | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
| MAT 115 Mathematical Models | [MAT 070] | F1 | 2 | 2 | 3 |
| | | | | | |
| <i>Social/Behavioral Science:</i> | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
| (Choose 3 semester credit hours of approved courses from the CAA Course List) | [Varies] | S2 | 3 | 0 | 3 |
| | | | | | |
| <i>Humanities/Fine Arts:</i> | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
| (Choose 3 semester credit hours of approved courses from the CAA Course List. Humanities elective cannot be elementary foreign language course or COM course.) | [Varies] | S1 | 3 | 0 | 3 |

Major Courses: Core

| | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
|-----------------------------------|---|------------|--------------|------------|----------------|
| <i>Core courses</i> | | | | | |
| CIS 110 Introduction to Computers | [ENG 090, RED 090, MAT 070] | F1 | 2 | 2 | 3 |
| or CIS 111 Basic PC Literacy | [None] | | 1 | 2 | 2 |
| CIS 115 Intro to Prog & Logic | [MAT 070 or MAT 080 or MAT 090 or MAT 095 or MAT 120 or MAT 121 or MAT 161 or MAT 171 or MAT 175] | S1 | 2 | 3 | 3 |
| CTS 285 System Analysis & Design | [CIS 115] [Coreq. - DBA 110] | F2 | 3 | 0 | 3 |
| CSC 289 Programming Capstone | [CTS 285 & (CSC 134/234 or CSC 139/239 or DBA 115/120)] | S2 | 1 | 4 | 3 |
| DBA 110 Database Concepts | [CIS 110 or CIS 111] | F2 | 2 | 3 | 3 |
| NOS 110 Operating Systems | [CIS 110 or CIS 111] | S1 | 2 | 3 | 3 |
| SEC 110 Security Concepts | [NET 110] | S2 | 3 | 0 | 3 |
| BUS 110 Introduction to Business | [ENG 090/RED 090] | S1 | 3 | 0 | 3 |
| NET 110 Networking Concepts | [CIS 110 or CIS 111] | F2 | 2 | 2 | 3 |
| NOS 130 Windows Single User | [NOS 110] | F2 | 2 | 2 | 3 |
| or NOS 120 Linux/Unix Single User | [NOS 110] | Varies | 2 | 2 | 3 |
| CSC 134 C++ Programming | [CIS 110 or CIS 111] | F2 | 2 | 3 | 3 |
| CSC 234 Adv C++ Programming | [CSC 134] | S2 | 2 | 3 | 3 |
| CSC 139 Visual BASIC | [Coreq. - CIS 110 or CIS 111] | F1 | 2 | 3 | 3 |
| CSC 239 Adv Visual BASIC | [CSC 139] | S1 | 2 | 3 | 3 |

Other Required Hours

| <i>Courses</i> | <i>[prerequisite]</i> | <i>Seq</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
|-----------------------|-----------------------|------------|--------------|------------|----------------|
| COE 110 World of Work | [None] | F1 | 1 | 0 | 1 |
| Programming Elective* | [Varies] | F2 | Varies | Varies | 2-3 |
| Programming Elective* | [Varies] | S2 | Varies | Varies | 3 |
| Programming Elective* | [Varies] | S2 | Varies | Varies | 3 |

*Programming Electives. Choose from the following:

| <i>Courses</i> | <i>[prerequisite]</i> | <i>Class</i> | <i>Lab</i> | <i>Credits</i> |
|----------------------------------|--|--------------|------------|----------------|
| CET 121 Assembly Language | [CIS 110 or CIS 111][Coreq. - CIS 111 or ELN 133] | 2 | 3 | 3 |
| COE 112 Cooperative Education | [min GPA 2.0, 9 hrs in major](2 hrs.) | | | |
| CSC 151 Java | [CIS 110 or CIS 111/CIS 115 or CSC 139 or CSC 134] | 2 | 3 | 3 |
| CTS 120 Hrd/Software Maintenance | [CIS 110 or CIS 111] | 2 | 3 | 3 |
| DBA 115 Database Applications | [DBA 110] | 2 | 3 | 3 |
| DBA 120 Database Programming I | [DBA 110] | 2 | 2 | 3 |
| WEB 183 Perl Programming | [CIS 115] | 2 | 2 | 3 |

Total Semester Hours Required for Associate Degree:

69-71

*If NOS 130 is taken to meet the O/S requirement, NOS 120 may be taken as an elective. If NOS 120 is taken to meet the O/S requirement, NOS 130 may be taken as an elective.



College of The Albemarle
 Associate in Applied Science
 Computer Programming (A 25 13 0)
 Graduation Check Sheet – 2009 - 2011

Listed below are the requirements for your degree program. It is your responsibility to keep this sheet up-to-date and review it with your advisor to know what you need to graduate. Complete the Graduation Application one semester prior to the intended date of graduation.

| Title | Sequence | Credit | Grade | Semester |
|--|----------|--------|-------|----------|
| I. GENERAL EDUCATION COURSES | | | | |
| Communications | | | | |
| ENG 111 Expository Writing [P=ENG090/RED090, C=ENG111A] | F1 | 3 | _____ | _____ |
| ENG111A Expository Writing Lab [C=ENG111] | F1 | 1 | _____ | _____ |
| ENG 112 Argument Based Research [P=ENG111] | | | | |
| -or- | | | | |
| ENG 113 Literature Based Research [P=ENG111] | S1 | 3 | _____ | _____ |
| -or- | | | | |
| ENG 114 [P=ENG111] | | | | |
| COM 110 Introduction to Communications [P=ENG090/RED090] | | | | |
| -or- | | | | |
| COM 120 Interpersonal Communication [P=ENG090/RED090] | S1 | 3 | _____ | _____ |
| -or- | | | | |
| COM 231 Public Speaking [P=ENG111] | | | | |
| Natural Science/Mathematics: | | | | |
| MAT 115 Mathematical Models [P=MAT070] | F1 | 3 | _____ | _____ |
| Social/Behavioral Science: (Choose 3 semester credit hours of approved courses from the CAA course List.) | | | | |
| _____ [P=Varies] | S2 | 3 | _____ | _____ |
| Humanities/Fine Arts: (Choose 3 semester credit hours of approved courses from the CAA course List. Humanities elective cannot be foreign language course or COM course.) | | | | |
| _____ [P=Varies] | S1 | 3 | _____ | _____ |
| II. MAJOR COURSES: | | | | |
| A. CORE | | | | |
| CIS 110 Introduction to Computers [P=ENG090, RED090, MAT070] or CIS 111 Basic PC Literacy | F1 | 2-3 | _____ | _____ |
| CIS 115 Intro to Prog & Logic [P=MAT070, MAT080, MAT090, MAT095, MAT120, MAT121, MAT161, MAT171, or MAT175] | F1 | 3 | _____ | _____ |
| CTS 285 System Analysis & Design [P=CIS115; C=DBA110] | F2 | 3 | _____ | _____ |
| CSC 289 Programming Capstone [P=CTS285 & (CSC13/234 or CSC139/239 or DBA115/120)] | S2 | 3 | _____ | _____ |
| DBA 110 Database Concepts [P=CIS110 or CIS111] | F2 | 3 | _____ | _____ |

| | | | | |
|--|----|---|-------|-------|
| NOS 110 Operating Systems [P=CIS110 or CIS111] | S1 | 3 | _____ | _____ |
| SEC 110 Security Concepts [P=NET110] | S2 | 3 | _____ | _____ |
| BUS 110 Introduction to Business [P=ENG090, RED090] | S1 | 3 | _____ | _____ |
| NET 110 Networking Concepts [P=CIS110 or CIS111] | F2 | 3 | _____ | _____ |
| NOS 130 Windows Single User [P=NOS110] or NOS 120 Linux/UNIX Single User [P=NOS110] | F2 | 3 | _____ | _____ |

C. OTHER MAJOR HOURS

| | | | | |
|--|----|-----|-------|-------|
| CSC 134 C++ Programming [P=CIS110 or CIS111] | F2 | 3 | _____ | _____ |
| CSC 234 Adv C++ Programming [P=CSC134] | S2 | 3 | _____ | _____ |
| CSC 139 Visual BASIC [P=CIS110 or CIS111] | F1 | 3 | _____ | _____ |
| CSC 239 Adv Visual BASIC [P=CSC139] | S1 | 3 | _____ | _____ |
| COE 110 World of Work | F1 | 1 | _____ | _____ |
| Programming Elective* | F2 | 2-3 | _____ | _____ |
| Programming Elective* | S2 | 3 | _____ | _____ |
| Programming Elective* | S2 | 3 | _____ | _____ |

* Programming Electives. Choose from the following:

- CET121 Assembly Programming [P=CIS110 or CIS111 C=CIS 111 or ELN 133]
- COE112 Cooperative Education (2 hrs)
- CSC151 Java [P=CIS110 or CIS111, CIS115 or CSC139 or CSC134]
- CTS 120 Hrd/Software Maintenance [P=CIS110 or CIS111]
- DBA115 Database Applications [P=DBA110]
- DBA120 Database Programming [P=DBA110]
- WEB183 Perl Programming [P=CIS115]

If NOS 130 is taken to meet the Operating System requirement, NOS120 may be taken as an elective. If NOS120 is taken to meet the Operating System requirement, NOS130 may be taken as an elective.

Total Semester Hours Required for Degree

69-71