



Information Technology Update 2018 Education and Business Summit

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Quote of the Day

Whether you want to uncover the secrets of the universe, or you just want to pursue a career in the 21st century, basic computer programming is an essential skill to learn.

Stephen Hawking

Overview

- Course Categories
- 3-Unit Completer Programs
- 4-Unit Completer Programs
- Course Standards Revisions
- 2018-2019 Course Name Changes
- Concentrator/Completer Data
- Textbook Reviews
- Information Technology Certifications/Credentials
- Technical Skills Assessment
- Professional Development
- Dual Credit Alignment

Course Categories

- Computer Repair and Service
- Cybersecurity and Computer Forensics
- Database and Data Analysis
- Operating Systems and Server Administration
- Networking
- Software Development and Programming
- Web Page Design and Animation

Employment Projections

Fastest growing occupations, 2016 and projected 2026
(Employment numbers in thousands)

| 2016 National Employment Matrix Title and Code | | Employment | | Change, 2016-2026 | | Median Annual Wage, 2017 (1) |
|--|---------|------------|---------|-------------------|---------|---------------------------------------|
| | | 2016 | 2026 | Number | Percent | |
| Software Developers, Applications | 15-1132 | 8331.3 | 1,086.6 | 255.4 | 30.7 | \$101,790 |
| Information Security Analysts | 15-1122 | 100.0 | 128.5 | 28.5 | 28.5 | \$95,510 |

(1) Data are from the Occupational Employment Statistics program, U.S. Bureau of Labor Statistics. Wage data cover non-farm wage and salary workers and do not cover the self-employed, owners and partners in unincorporated firms, or household workers.

Source: Employment Projections program, U.S. Bureau of Labor Statistics

Information Technology

Three Unit CIP Coded Programs

| <i>Program</i> | <i>CIP Code</i> |
|--------------------------------------|-----------------|
| Information Support and Services | 151202 |
| Networking Systems | 110901 |
| Programming and Software Development | 110201 |
| Web and Digital Communications | 110801 |

Science, Technology, Engineering, and Mathematics

Four Unit CIP-Coded Programs

| <i>Program</i> | <i>CIP Code</i> |
|--|-----------------|
| Computer and Information Systems Security/Information Assurance | 111003 |
| Computer Science (PLTW) | 110701 |

Concentrators and Completers

| Information Technology 2016 - 2017 | |
|--|-------------------|
| Concentrators | Completers |
| 887 | 466 |
| | |
| Science, Engineering, Technology, and Mathematics 2016 - 2017 | |
| Concentrators | Completers |
| 1,459 | 855 |

Information Technology

Information Support and Services

CIP Code - 151202

Required Courses:

Computer Repair and Service

Advanced Computer Repair and Service

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|---|---|
| Advanced Server Administration* | Entrepreneurship* |
| Computer Programming 1* | Fundamentals of Computing*(formerly Exploring Computer Science) |
| Computer Programming with C++ 1* | Fundamentals of Computing* (New Course) |
| Computer Programming with Java 1* | Server Administration* |
| Computer Programming with Visual Basic 1* | |

Plus:

Information Technology, work-based credit

Information Technology

Networking Systems

CIP Code - 110901

Required Courses:

Networking Fundamentals

Advanced Networking

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--------------------------------------|--|
| Advanced Computer Operating Systems* | Fundamentals of Computing* (formerly Exploring Computer Science) |
| Computer Operating Systems* | Home Systems Technology* |
| Entrepreneurship* | Server Administration* |

Plus:

Information Technology, work-based credit

Information Technology

Programming and Software Development

CIP Code – 110201

Required Courses:

Computer Programming 1

Computer Programming 2

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--|---|
| Computer Programming with C++ 1* | GIS Technology 1* |
| Computer Programming with Java 1* | IT Fundamentals* |
| Computer Programming with Visual Basic 1* | Java Fundamentals and Java Programming* |
| Database Design and Programming with SQL* | SAS Programming 1* |
| Fundamentals of Computing* (formerly Exploring Computer Science) | |

Plus:

Information Technology, work-based credit

Information Technology

Programming and Software Development

CIP Code – 110201

Required Courses:

Computer Programming with C++ 1

Computer Programming with C++ 2

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--|---|
| Computer Programming 1* | GIS Technology 1* |
| Computer Programming with Java 1* | IT Fundamentals* |
| Computer Programming with Visual Basic 1* | Java Fundamentals and Java Programming* |
| Database Design and Programming with SQL* | SAS Programming 1* |
| Fundamentals of Computing* (formerly Exploring Computer Science) | |

Plus:

Information Technology, work-based credit

Information Technology

Programming and Software Development

CIP Code – 110201

Required Courses:

Computer Programming with Java 1

Computer Programming with Java 2

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--|---|
| Computer Programming 1* | GIS Technology 1* |
| Computer Programming with C++ 1* | IT Fundamentals* |
| Computer Programming with Visual Basic 1* | Java Fundamentals and Java Programming* |
| Database Design and Programming with SQL* | SAS Programming 1* |
| Fundamentals of Computing* (formerly Exploring Computer Science) | |

Plus:

Information Technology, work-based credit

Information Technology

Programming and Software Development

CIP Code – 110201

Required Courses:

Computer Programming with Visual Basic 1

Computer Programming with Visual Basic 2

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--|---|
| Computer Programming 1* | GIS Technology 1* |
| Computer Programming with C++ 1* | IT Fundamentals* |
| Computer Programming with Java 1* | Java Fundamentals and Java Programming* |
| Database Design and Programming with SQL* | SAS Programming 1* |
| Fundamentals of Computing* (formerly Exploring Computer Science) | |

Plus:

Information Technology, work-based credit

Information Technology

Programming and Software Development

CIP Code – 110201

Required Courses:

Database Design and Programming with SQL

Database Programming with PL/SQL

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|--|---|
| Computer Programming 1* | GIS Technology 1* |
| Computer Programming with C++ 1* | IT Fundamentals* |
| Computer Programming with Java 1* | Java Fundamentals and Java Programming* |
| Computer Programming with Visual Basic 1* | SAS Programming 1* |
| Fundamentals of Computing* (formerly Exploring Computer Science) | |

Plus:

Information Technology, work-based credit

Information Technology

Web and Digital Communications

CIP Code - 110801

Required Courses:

Fundamentals of Web Page Design and Development

Advanced Web Page Design and Development

** Additional approved courses if needed to meet state-recognized program requirements:*

| | |
|------------------------------|--|
| Advanced Animation* | Fundamentals of Computing* (formerly Exploring Computer Science) |
| Cyber Security Fundamentals* | Image Editing 1* |
| Digital Media Marketing* | Image Editing 2* |
| Digital Multimedia* | Social Media in Business* |
| Digital Technologies* | |

Plus:

Information Technology, work-based credit

Science, Technology, Engineering, and Mathematics Computer Science (PLTW) CIP Code - 110701

The Computer Science (PLTW) CIP-coded program requires a minimum of four (4) Carnegie units.

| |
|-------------------------------------|
| Computer Science Essentials (CSE) |
| Computer Science Principles (CSP) |
| Computer Science Applications (CSA) |
| Cybersecurity (Fall 2018) |

Plus:

**Science, Technology, Engineering, Mathematics
work-based credit**

Science, Technology, Engineering, and Mathematics

Computer and Information Systems Security/ Information Assurance

CIP Code - 111003

Required Courses:

Fundamentals of Cyber Security

Advanced Cyber Security

Additional approved courses if needed to meet state-recognized program requirements: (choose two (2))

| | |
|------------------------------------|--|
| Advanced Networking | Fundamentals of Computing (formerly Exploring Computer Science) |
| Computer Forensics | Networking Fundamentals |
| Computer Science Essentials (PLTW) | |

Plus:
Science, Technology, Engineering, Mathematics work-based credit

Information Technology

Course Standards Revisions Update

- Completed
 - Advanced Cyber Security (requires follow-up)
 - Advanced Webpage Design and Development
 - Advanced Animation
 - Cyber Security Fundamentals
 - Computer Forensics (requires follow-up)
 - Exploring Computer Science (changed to Fundamentals of Computing)
 - Foundations of Animation
 - Game Design and Development
 - Webpage Design and Development
- Upcoming
 - Computer Repair and Service (including Advanced)
 - Computer Programming (1,2; Java 1,2; C++ 1,2; Visual Basic 1,2; SQL,PL/SQL; SAS 1, 2)

Information Technology

Course Changes for 2018-2019

- Fundamentals of Computing: 5023
 - Formerly Exploring Computer Science
 - Name Change Only

Textbook Reviews

2018

- AP Computer Science and Computer Programming
- Advanced Networking, Networking Fundamentals, and Computer Repair and Service
- Exploring Computer Science (9-12) and IT Fundamentals

Information Technology

Certifications/Credentials

- Academy of Information Technology
 - NAF
- Adobe
 - ACA, ACE
- CERTIPORT
 - IC 3, ACA, Autodesk, TCA, MTA
- CISCO
 - CCNA, CCENT
- CIW
- CompTIA
 - A+, Network+, DHTI+, IT Fundamentals, Security+

Information Technology

Certifications/Credentials

- Electronics Technicians Association
 - ETA-1
- (ISC)²
 - SSCP
- Microsoft
 - MTA, MCSA, MCSE, MCSD, MCPS, MCT
- Network and Computer Technicians
 - NCT, NST, CST, WNT
- Oracle
 - JA, CA, SQL, PL/SQL, Java
- TestOut
 - PC Pro, Network Pro, Security Pro, Windows Server Pro

TECHNICAL SKILLS ASSESSMENTS

| TSA | Fall 2017 Schools / Number | Spring 2018 Schools / Number |
|--|---------------------------------------|---|
| Information Support and Services | 1 / 8 | 4 / 19 |
| Networking | 1 / 17 | 0 / 0 |
| Programming and Software Development C++ | 0 / 0 | 2 / 13 |
| Programming and Software Development Visual Basic | 0 / 0 | 6 / 37 |
| PLTW Computer Science A | 0 / 0 | 2 / 10 |
| PLTW Computer Science Principles | 2 / 33 | 5 / 72 |

Career and Technology Student Organizations



Business Professionals
of America



Technology Student Association
SC Technology Student Association



SkillsUSA
SC SkillsUSA



FBLA-PBL
SC FBLA

Information Technology

Professional Development for Teachers

- Clemson University
 - Exploring Computer Science & AP Computer Science Principles – Summer 2018
- code.org
 - CS Discoveries & CS Principles - 2018
- Exploring Computer Science
 - Pathfinders - Summer 2018
- SC Education & Business Summit - 2018

Information Technology

Professional Development for Teachers

- IT-ology Computer Science Training (ongoing)
- Carolina Institute of Technology
 - Introduction to Computer Science (Summer 2018)
- K12 Computer Science
 - Teacher Development and Curriculum
- Project Lead The Way (PLTW)
 - Core Training
- SC Cyber Higher Education Database

Information Technology

Dual Credit Course Offerings for Completer Status

| CATE Course Name | CATE Course Code | Postsecondary Course Name | Postsecondary Course Code |
|-------------------------------------|-------------------------|----------------------------------|----------------------------------|
| Advanced Computer Operating Systems | 5323 | Operating Systems | CPT 257 – 837700EW |
| Advanced Networking | 5311 | Information System Security | CPT 282 – 827900EW |
| Advanced Networking | 5311 | Networking II | CIS 225 – 67600EW |
| Computer Repair and Service | 5320 | Computer Systems Management | CPT 209 – 672200EW |
| Computer Forensics | 5374 | Computer Forensics | IST 268 – 877000EW |
| Networking Fundamentals | 5310 | Data Communication | IST 220 – 876200EW |

Information Technology

Dual Credit Course Offerings for Completer Status

| CATE Course Name | CATE Course Code | Postsecondary Course Name | Postsecondary Course Code |
|---|-------------------------|----------------------------------|----------------------------------|
| Computer Programming 1 | 5050 | Computer Programming 1 | CSCI 220 - 672700EW |
| Computer Programming with Java 1 | 5052 | Intro to Java Programming | CPT 236 - 537300EW |
| Computer Programming with Java 2 | 5053 | Advanced Java Programming | CPT 237 - 837100EW |
| Computer Programming with C++ 1 | 5056 | C++ Programming I | CPT 232 - 537500EW |
| Computer Programming with Visual Basic 1 | 5054 | Visual Basic Net I | CPT 186 - 673400EW |
| Fundamentals of Web Page Design and Development | 5031 | Internet & Web Design | CPT 162 – 503700EW |

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Computer Science Standards (9 – 12)

Office of Standards and Learning

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