# Business and Computer Science

## Certificate of Proficiency

| Degree | Required Credit Hours |
|---|---|
| Computer Programming | 9 |
| Computer Technology | 9 |
| Cybersecurity Fundamentals | 12 |
| Network and System Administration | 9 |

## Technical Certificate

| Degree | Required Credit Hours |
|---|---|
| Computer Technology | 30 |
| Cybersecurity | 21 |
| Entrepreneurship | 33 |
| Management and Supervision | 27 |
| Software Development | 30 |

## Associate of Applied Science

| Degree | Required Credit Hours |
|---|---|
| Computer Technology | 60 |
| Management and Supervision | 60 |

## Associate of Science

| Degree | Required Credit Hours |
|---|---|
| Business | 62 |

# Certificate of Proficiency Computer Programming

**Program Learning Outcomes**

- Apply database design principles and use database management systems effectively.
- Demonstrate ability in at least one modern programming language (e.g., Python, Java, or C++).

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Database Fundamentals** | CPSI 20263 | 3 |
| **Fundamentals of Programming** | CPSI 21563 | 3 |
| **Javascript Fundamentals** | CPSI 26063 | 3 |

**Total Credit Hours Required for Credential Completion: 9**

## Certificate of Proficiency Computer Technology

**Program Learning Outcomes**

- Develop an understanding of various technology fields and career paths, to enable informed decision making about future studies or professional pursuits in the technology sector.
- Explain the basic components and functions of a computer system.
- Utilize industry-standard tools and technologies for web design.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Introduction to Computers** | CPSI 10003 | 3 |
| **Survey of Computer Technology** | CPSI 10363 | 3 |
| **Fundamentals of Web Development** | CPSI 22563 | 3 |

**Total Credit Hours Required for Credential Completion: 9**

## Certificate of Proficiency Cybersecurity Fundamentals

**Program Learning Outcomes**

- Apply the crosscutting concepts related to cybersecurity thought and principles.
- Demonstrate knowledge of computer programming and design.
- Discuss fundamental ethical, legal, and social issues in computer science.
- Understand the components of cybersystems and security issues including requirements and controls.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Introduction to Cybersecurity** | CESC 22363 | 3 |
| **System Security** | CESC 21003 | 3 |
| **Fundamentals of Programming** | CPSI 21563 | 3 |
| **Computer Ethics** | CPSI 22063 | 3 |

**Total Credit Hours Required for Credential Completion: 12**

## Certificate of Proficiency Network and System Administration

**Program Learning Outcomes**

- Analyze and compare network protocols.
- Recognize basic cybersecurity measures used to protect computer systems and networks.
- Demonstrate ability to apply project management concepts and tools to initiate, plan, execute, monitor, and control a project effectively.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Introduction to Cybersecurity** | CESC 22363 | 3 |
| **Fundamentals of Network** | CPSI 25063 | 3 |
| **Project Management** | MGMT 20253 | 3 |

**Total Credit Hours Required for Credential Completion: 9**

# Technical Certificate Computer Technology

## Program Learning Outcomes

- Develop an understanding of various technology fields and career paths, to enable informed decision making about future studies or professional pursuits in the technology sector.
- Explain the basic components and functions of a computer system.
- Demonstrate ability in at least one modern programming language (e.g., Python, Java, or C++).
- Apply database design principles and use database management systems effectively.
- Utilize industry-standard tools and technologies for software development and web design.

## Program Requirements

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Introduction to Computers | CPSI 10003 | 3 |
| Survey of Computer Technology | CPSI 10363 | 3 |
| User Interface and Human Interaction | CPSI 12063 | 3 |
| Database Fundamentals | CPSI 20263 | 3 |
| Fundamentals of Programming | CPSI 21563 | 3 |
| Fundamentals of Web Development | CPSI 22563 | 3 |
| JavaScript Fundamentals | CPSI 26063 | 3 |

## English and Writing Requirement

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| English Composition I | ENGL 10103 | 3 |
| Technical Writing for the Workplace | ENGL 20203 | 3 |

## Math Requirement

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Technical Math | MATH 10103 | 3 |
| College Algebra | MATH 11003 | 3 |
| Quantitative Literacy | MATH 11103 | 3 |

**Total Credit Hours Required for Credential Completion: 30**

# Technical Certificate Cybersecurity

**Program Learning Outcomes**

- Apply the crosscutting concepts related to cybersecurity thought and principles.
- Demonstrate knowledge of computer programming and design.
- Discuss fundamental ethical, legal, and social issues in computer science.
- Understand the components of cybersystems and security issues including requirements and controls.
- Analyze security threats to modern networks and the methods used to secure against threats.
- Categorize logical and physical access control policy and mechanisms for cybersystems.
- Apply mathematical logical and reasoning principles to model problems in computer science.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Network Security** | CESC 22433 | 3 |
| **Introduction to Cybersecurity** | CESC 22363 | 3 |
| **System Security** | CESC 21003 | 3 |
| **Fundamentals of Programming** | CPSI 21563 | 3 |
| **Computer Ethics** | CPSI 22063 | 3 |
| **Access Control** | CPSI 23263 | 3 |
| **Discrete Mathematics** | MATH 23103 | 3 |

**Total Credit Hours Required for Credential Completion: 21**

## Technical Certificate Entrepreneurship

**Program Learning Outcomes**

- Develop and articulate a comprehensive business plan for a new venture, including market analysis, financial projections, and operational strategies.
- Demonstrate proficiency in fundamental business skills such as accounting, marketing, and basic legal concepts relevant to small business ownership.
- Apply creative problem-solving and critical thinking skills to address common challenges faced by entrepreneurs and small business owners.
- Utilize digital tools and technologies effectively for business management, marketing, and customer relationship management in a small business context.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Principles of Accounting I | ACCT 10003 | 3 |
| Introduction to Entrepreneurship | BUSI 10033 | 3 |
| Professional Selling and Advertising | BUSI 20033 | 3 |
| Business Ethics | BUSI 21143 | 3 |
| Feasibility and Funding | BUSI 21303 | 3 |
| Small Business Management | BUSI 27543 | 3 |
| English Composition I | ENGL 10103 | 3 |
| Introduction to Computers | CPSI 10003 | 3 |
| Principles of Management | MGMT 20163 | 3 |
| Principles of Marketing | MKTG 25183 | 3 |

**Math Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Technical Math | MATH 10103 | 3 |
| College Algebra | MATH 11003 | 3 |
| Quantitative Literacy | MATH 11103 | 3 |

**Total Credit Hours Required for Credential Completion: 33**

## Technical Certificate Management and Supervision

**Program Learning Outcomes**

- Apply critical thinking and problem-solving techniques to address management challenges.
- Analyze financial statements and budgets to make informed business decisions.
- Analyze and evaluate cybersecurity risks, threats, and vulnerabilities in digital environment and develop security strategies that comply with relevant laws and privacy standards.
- Develop professional communication skills to effectively collaborate with internal and external stakeholders.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Introduction to Business | BUSI 10103 | 3 |
| Introduction to Cybersecurity | CESC 22363 | 3 |
| English Composition I | ENGL 10103 | 3 |
| Customer Relations Management | MGMT 10153 | 3 |
| Principles of Leadership | MGMT 20053 | 3 |
| Principles of Management | MGMT 20163 | 3 |
| Principles of Marketing | MKTG 25183 | 3 |

**Finance Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Principles of Accounting I | ACCT 10003 | 3 |
| Principles of Finance | BUSI 22543 | 3 |

**Math Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| College Algebra | MATH 11003 | 3 |
| Quantitative Literacy | MATH 11103 | 3 |

**Total Credit Hours Required for Credential Completion: 27**

## Technical Certificate Software Development

**Program Learning Outcomes**

- Demonstrate ability in at least one modern programming language (e.g., Python, Java, or C++).
- Utilize industry-standard tools and technologies for software development and web design.
- Apply database design principles and use database management systems effectively.
- Demonstrate ability to apply project management concepts and tools to initiate, plan, execute, monitor, and control a project effectively.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| User interface and Human Interaction | CPSI 12063 | 3 |
| Database Fundamentals | CPSI 20263 | 3 |
| Fundamentals of Programming | CPSI 21563 | 3 |
| Fundamentals of Web Development | CPSI 22563 | 3 |
| JavaScript Fundamentals | CPSI 26063 | 3 |
| Survey of Programming Languages | CPSI 28063 | 3 |
| Project Management | MGMT 20253 | 3 |
| Oral Communication | SPCH 10003 | 3 |

**English and Writing Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| English Composition I | ENGL 10103 | 3 |
| Technical Writing for the Workplace | ENGL 20203 | 3 |

**Math Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Technical Math | MATH 10103 | 3 |
| College Algebra | MATH 11003 | 3 |
| Quantitative Literacy | MATH 11103 | 3 |

**Total Credit Hours Required for Credential Completion: 30**

## Associate of Applied Science Computer Technology

**Program Learning Outcomes**

- Explain the basic components and functions of a computer system.
- Demonstrate ability in at least one modern programming language (e.g., Python, Java, or C++).
- Analyze and compare different operating systems and network protocols.
- Recognize basic cybersecurity measures used to protect computer systems and networks.
- Utilize industry-standard tools and technologies for software development and web design.
- Apply database design principles and use database management systems effectively.
- Recognize professional standards and ethical behavior in the computing field, including an understanding of the impacts of modern and emerging technologies.
- Design and implement technology-based solutions to meet specific requirements.
- Develop an understanding of various technology fields and career paths, to enable informed decision making about future studies or professional pursuits in the technology sector.
- Demonstrate ability to apply project management concepts and tools to initiate, plan, execute, monitor, and control a project effectively.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Introduction to Cybersecurity | CESC 22363 | 3 |
| Introduction to Computers | CPSI 10003 | 3 |
| Survey of Computer Technology | CPSI 10363 | 3 |
| User Interface and Human Interaction | CPSI 12063 | 3 |
| Database Fundamentals | CPSI 20263 | 3 |
| Emerging Trends in Technology | CPSI 21063 | 3 |
| Computer Technology Capstone | CPSI 21163 | 3 |
| Fundamentals of Programming | CPSI 21563 | 3 |
| Computer Ethics | CPSI 22063 | 3 |
| Fundamentals of Web Development | CPSI 22563 | 3 |
| Fundamentals of Networking | CPSI 25063 | 3 |
| JavaScript Fundamentals | CPSI 26063 | 3 |
| Survey of Programming Languages | CPSI 28063 | 3 |
| English Composition I | ENGL 10103 | 3 |
| Technical Writing for the Workplace | ENGL 20203 | 3 |
| Oral Communication | SPCH 10003 | 3 |
| Social Media Management | MGMT 10253 | 3 |

| Project Management | MGMT 20253 | 3 |
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## Math Requirement

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
| --- | --- | --- |
| Technical Math | MATH 10103 | 3 |
| College Algebra | MATH 11003 | 3 |
| Quantitative Literacy | MATH 11103 | 3 |

## Social Science Requirement

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
| --- | --- | --- |
| Macroeconomics | ECON 22003 | 3 |
| Microeconomics | ECON 11103 | 3 |
| World Civilization I | HIST 11103 | 3 |
| World Civilization II | HIST 11203 | 3 |
| United States History I | HIST 21103 | 3 |
| United States History II | HIST 21203 | 3 |
| United States Government | PLSC 20003 | 3 |
| Principles of Sociology | SOCI 10103 | 3 |

**Total Credit Hours Required for Credential Completion: 60**

## Associate of Applied Science Management and Supervision

**Program Learning Outcomes**

- Demonstrate knowledge of effective leadership and supervisory skills in diverse organizational settings.
- Apply critical thinking and problem-solving techniques to address management challenges.
- Develop and implement strategies for team building, motivation, and conflict resolution.
- Utilize data-driven decision-making processes to optimize organizational performance and resource allocation.
- Apply ethical principles and professional standards in business management practices.
- Analyze financial statements and budgets to make informed business decisions.
- Demonstrate understanding of human resource management principles, including recruitment, training, and performance evaluation.
- Exhibit professional communication skills to effectively collaborate with internal and external stakeholders.
- Analyze and evaluate cybersecurity risks, threats, and vulnerabilities in digital environment and develop security strategies that comply with relevant laws and privacy standards.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Legal Environment of Business | BLAW 20003 | 3 |
| Introduction to Business | BUSI 10103 | 3 |
| Business Ethics | BUSI 21143 | 3 |
| Internship | BUSI 26543 | 3 |
| Introduction to Cybersecurity | CESC 22363 | 3 |
| English Composition I | ENGL 10103 | 3 |
| English Composition II | ENGL 10203 | 3 |
| Public Relations | MGMT 10053 | 3 |
| Customer Relations Management | MGMT 10153 | 3 |
| Social Media Management | MGMT 10253 | 3 |
| Principles of Leadership | MGMT 20053 | 3 |
| Conflict Management | MGMT 20153 | 3 |
| Principles of Management | MGMT 20163 | 3 |
| Project Management | MGMT 20253 | 3 |
| Human Resource Management | MGMT 20453 | 3 |
| Principles of Marketing | MKTG 25183 | 3 |
| Oral Communication | SPCH 10003 | 3 |

**Finance Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Principles of Accounting I** | ACCT 10003 | 3 |
| **Principles of Finance** | BUSI 22543 | 3 |

**Math Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Technical Math** | MATH 10103 | 3 |
| **College Algebra** | MATH 11003 | 3 |
| **Quantitative Literacy** | MATH 11103 | 3 |

**Social Science Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **General Psychology** | PSYC 11003 | 3 |
| **Principles of Sociology** | SOCI 10103 | 3 |

**Total Credit Hours Required for Credential Completion: 60**

## Associate of Science Business

**Program Learning Outcomes:**

- Demonstrate an understanding of ethical principles and their application in decision-making processes.
- Analyze financial data to assess the performance of businesses and organizations.
- Integrate perspectives from accounting, economics, law and statistics to develop solutions to business obstacles.
- Exhibit proficiency in oral and written communication for business environments.

**Program Requirements**

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Principles of Accounting I | ACCT 10003 | 3 |
| Principles of Accounting II | ACCT 10103 | 3 |
| Legal Environment of Business | BLAW 20003 | 3 |
| Computer Software Applications | BUSI 10563 | 3 |
| Business Statistics | BUSI 21003 | 3 |
| Macroeconomics | ECON 21003 | 3 |
| Microeconomics | ECON 22003 | 3 |
| English Composition I | ENGL 10103 | 3 |
| English Composition II | ENGL 10203 | 3 |
| College Algebra | MATH 11003 | 3 |
| Survey of Calculus/Business Calculus | MATH 22003 | 3 |
| Principles of Sociology | SOCI 10103 | 3 |
| Oral Communication | SPCH 10003 | 3 |

**Fine Arts and Humanities Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Visual Art | ARHS 10003 | 3 |
| Music | MUSC 10003 | 3 |
| Theater | THTR 10003 | 3 |

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **World Literature I** | ENGL 21103 | 3 |
| **World Literature II** | ENGL 21203 | 3 |

## Life Science Requirement

4 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| Biology for General Education Lab | BIOL 10031 | 1 |
| Biology for General Education | BIOL 10043 | 3 |
| Biology for Majors Lab | BIOL 10101 | 1 |
| Biology for Majors | BIOL 10103 | 3 |

## Physical Science Requirement

4 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **Physical Science Lab** | PHSC 10031 | 1 |
| **Physical Science** | PHSC 10043 | 3 |
| **University Physics I Lab** | PHYS 20301 | 1 |
| **University Physics I** | PHYS 20303 | 3 |

## Social Science Requirement

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **World Civilization I** | HIST 11103 | 3 |
| **World Civilization II** | HIST 11203 | 3 |

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---|
| **United States History I** | HIST 21103 | 3 |
| **United States History II** | HIST 21203 | 3 |
| **United States Government** | PLSC 20003 | 3 |

**Program Elective Requirement**

3 credit hours from the following required:

| Course Name | Course Number | Credit Hours |
|---|---|---:|
| **Introduction to Business** | BUSI 10103 | 3 |
| **Business Communications** | BUSI 20103 | 3 |

**Recommended program Elective Selection**

| Transfer Institution | Course Name | Course Number |
|---|---|---|
| **Arkansas State University** | Business Communication | BUSI 20103 |
| **Arkansas Tech University** | Introduction to Business | BUSI 10103 |
| **Henderson State University** | Business Communication | BUSI 20103 |
| **University of Central Arkansas** | Business Communication | BUSI 20103 |
| **University of Arkansas Fort Smith** | Business Communication | BUSI 20103 |
| **University of Arkansas Little Rock** | Introduction to Business | BUSI 10103 |
| **University of Arkansas Monticello** | Introduction to Business | BUSI 10103 |
| **University of Arkansas Pine Bluff** | Introduction to Business | BUSI 10103 |

**Total Credit Hours Required for Credential Completion: 62**