

Cybersecurity Technology Mississippi Curriculum Framework

Program CIP: 11.1003 – Computer and Information Systems Security

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The Office of Curriculum and Instruction (OCI) was founded in 2013 under the Division of Workforce, Career, and Technical Education at the Mississippi Community College Board (MCCB). The office is funded through a partnership with The Mississippi Department of Education (MDE), who serves as Mississippi's fiscal agent for state and federal Career and Technical Education (CTE) Funds. The OCI is tasked with developing statewide CTE curriculum, programming, and professional development designed to meet the local and statewide economic demand.

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Industry Job Projection Data

A summary of occupational data is available from the Mississippi Department of Employment Security.

[MDES Labor Market Information](#)

Articulation

Check with the local community college CTE administration for articulation agreements.

Industry Credentials, Certifications, and Professional Licensure

As curricula are revised or developed for Career Technical Education (for credit) programs at Mississippi's community colleges, appropriate industry credentials/certifications/professional licensure are identified (where applicable).

Each community college cooperating with businesses/industries in their college district determines if and when industry credentials/certifications/professional licensure are warranted.

Contact each community college for more information.

Dual Enrollment

See the "Procedures Manual for Dual Enrollment and Accelerated Programs"

[Mississippi Dual Enrollment](#)

Research Abstract

In the fall of 2025, the Office of Curriculum and Instruction (OCI) met with the different industry members who made up the advisory committees for the Information Systems program. An industry questionnaire was used to gather feedback concerning the trends and needs, both current and future, of their field.

Program faculty, administrators, and industry members were consulted regarding industry workforce needs and trends.

Industry advisory team members from the college involved with this program were asked to give input related to changes to be made to the curriculum framework. Specific comments related to soft skills discussed include communication skill, grammar skills, evidence of the ability to learn, must be adaptable, and a well-rounded employee

Several courses had name modifications and new courses were added. For a complete list of name modifications and new courses, please refer to the course crosswalk at the end of this curriculum document.

All programs of study were modified to follow the 30/45/60 stackable credentials model for a career certificate, a technical certificate, and an Associate of Applied Science degree.

Revision History:

2012, Revised, Research and Curriculum Unit, Mississippi State University
2017, Revised, Office of Curriculum and Instruction, Mississippi Community College Board
2026, Revised, Office of Curriculum and Instruction, Mississippi Community College Board

Program Description

The Information Systems Technology program includes a basic core of courses designed to prepare a student for Cybersecurity Technology

The curriculum is designed to give each student:

- a broad overview of information systems;
- exposure to career options available within the field;
and
- a concentration of skills in a specific area.

Upon successful completion of the program, graduates earn an associate degree in applied science. Course work prepares students for national certification exams pertinent to each field of study.

Cybersecurity Technology option offers training in the areas of confidentiality, integrity, and availability in information security. Students will learn to install, design, manage, operate, plan, maintain and troubleshoot hardware in a secure information technology infrastructure.

Suggested Course Sequence

Career Certificate Required Courses

			SCH Breakdown			Contact Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab	Certification Name
IST 1124 OR IST 1183 AND IST 1193	IT Foundations OR Essentials of Information Systems Technology AND Practical Applications in Information Systems Technology*	4-6	2	4				
IST1134	Fundamentals of Data Communications	4	2	4				
IST 1224	Network Components	4	2	2				
IST 1244 OR IST 1254	Network Admin Using MS Windows Server OR Network Admin Using Linux	4	3	2				
	Electives	14						
	TOTAL	30-32						

*Institutions choosing the split option will have fewer available elective hours in this sequence.

Technical Certificate Required Courses

			SCH Breakdown			Contact Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab	Certification Name
IST 1643 OR IST 1633	Network Defense and Countermeasures OR Wireless Security and Privacy	3	2	2				
	Elective	12						
	TOTAL	15						

Technical Certificate Required Courses

			SCH Breakdown			Contact Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab	Certification Name

IST 2154	Introduction to Cloud Computing	4	2	4				
	Electives	11						
	TOTAL	15						

General Education Core Courses –Cybersecurity Technology

To receive the Associate of Applied Science Degree, a student must complete all of the required coursework found in the Career Certificate option, Technical Certificate option and a minimum of 15 semester hours of General Education Core. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester or provided primarily within the last semester. Each community college will specify the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college. The Southern Association of Colleges and Schools (SACS) Commission on Colleges Standard 2.7.3 from the Principles of Accreditation: Foundations for Quality Enhancement¹ describes the general education core.

Section 2.7.3 In each undergraduate degree program, the institution requires the successful completion of a general education component at the collegiate level that (1) is substantial component of each undergraduate degree, (2) ensures breadth of knowledge, and (3) is based on a coherent rationale. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours or the equivalent. These credit hours are to be drawn from and include at least one course from the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. The courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession.

			SCH Breakdown		Contact Hour Breakdown
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Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab
	Humanities/Fine Arts	3	3		45	45	
	Social/Behavioral Science	3	3		45	45	
	Math/Science Elective	3	3		45	45	
	Other academic courses per local community college requirements for AAS degree.	6					
	TOTAL	15					

Southern Association of Colleges and Schools Commission on Colleges. (2024). The Principles of Accreditation: Foundations for Quality Enhancement. Retrieved from [SACSCOC 2024 Principles Of Accreditation](#)

Cybersecurity Technology Courses

Student learning outcomes and other course information for IST classes can be found at: [MCCB Curriculum Webpage](#)

Appendix A: Recommended Tools and Equipment

Capitalized Items

1. Computer work centers, including desk and chair (1 per student)
2. Multimedia computer (Mac or PC) with headsets, sound card, and USB port for jump drive (1 per student)
 - a. Color laser printer (1 per classroom)
 - b. Laser printer (1 per lab)
 - c. Scanner, color page (1 per lab)
 - d. Internet access
3. Data projector (1 per lab)
4. Teacher workstation (laptop computer with printer, scanner, and Internet access)
5. Program specific software/hardware

Non-Capitalized Items

1. Document Camera

Recommended Instructional Aids

It is recommended that instructors have access to the following items:

1. Microsoft® Office software or equivalent productivity, latest version
2. Windows, latest version
3. Smart Board
4. Adobe Creative Suite

Appendix B: Curriculum Definitions and Terms

- Course Name – A common name that will be used by all community colleges in reporting students
- Course Abbreviation – A common abbreviation that will be used by all community and junior colleges in reporting students
- Classification – Courses may be classified as the following:
 - Career Certificate Required Course – A required course for all students completing a career certificate.
 - Technical Certificate Required Course – A required course for all students completing a technical certificate.
 - Technical Elective – Elective courses that are available for colleges to offer to students.
- Description – A short narrative that includes the major purpose(s) of the course
- Prerequisites – A listing of any courses that must be taken prior to or on enrollment in the course
- Corequisites – A listing of courses that may be taken while enrolled in the course
- Student Learning Outcomes – A listing of the student outcomes (major concepts and performances) that will enable students to demonstrate mastery of these competencies

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75% of the time allocated to each course. The remaining 25% of each course should be developed at the local district level and may reflect the following:
 - Additional competencies and objectives within the course related to topics not found in the state framework, including activities related to specific needs of industries in the community college district
 - Activities that develop a higher level of mastery on the existing competencies and suggested objectives
 - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed or revised
 - Activities that include integration of academic and career–

technical skills and course work, school-to-work transition activities, and articulation of secondary and postsecondary career–technical programs

- Individualized learning activities, including work-site learning activities, to better prepare individuals in the courses for their chosen occupational areas
- Sequencing of the course within a program is left to the discretion of the local college. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors. Programs that offer an Associate of Applied Science Degree must include all of the required Career Certificate courses, Technical Certificate courses **AND** a minimum of 15 semester hours of General Education Core Courses. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester. Each community college specifies the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college.
- In order to provide flexibility within the districts, individual courses within a framework may be customized by doing the following:
 - Adding new student learning outcomes to complement the existing competencies and suggested objectives in the program framework
 - Revising or extending the student learning outcomes
 - Adjusting the semester credit hours of a course to be up 1 hour or down 1 hour (after informing the Mississippi Community College Board [MCCB] of the change).

Appendix C: Certifications

Certification Name	College
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