



IT Cybersecurity Model Curriculum for California Community Colleges

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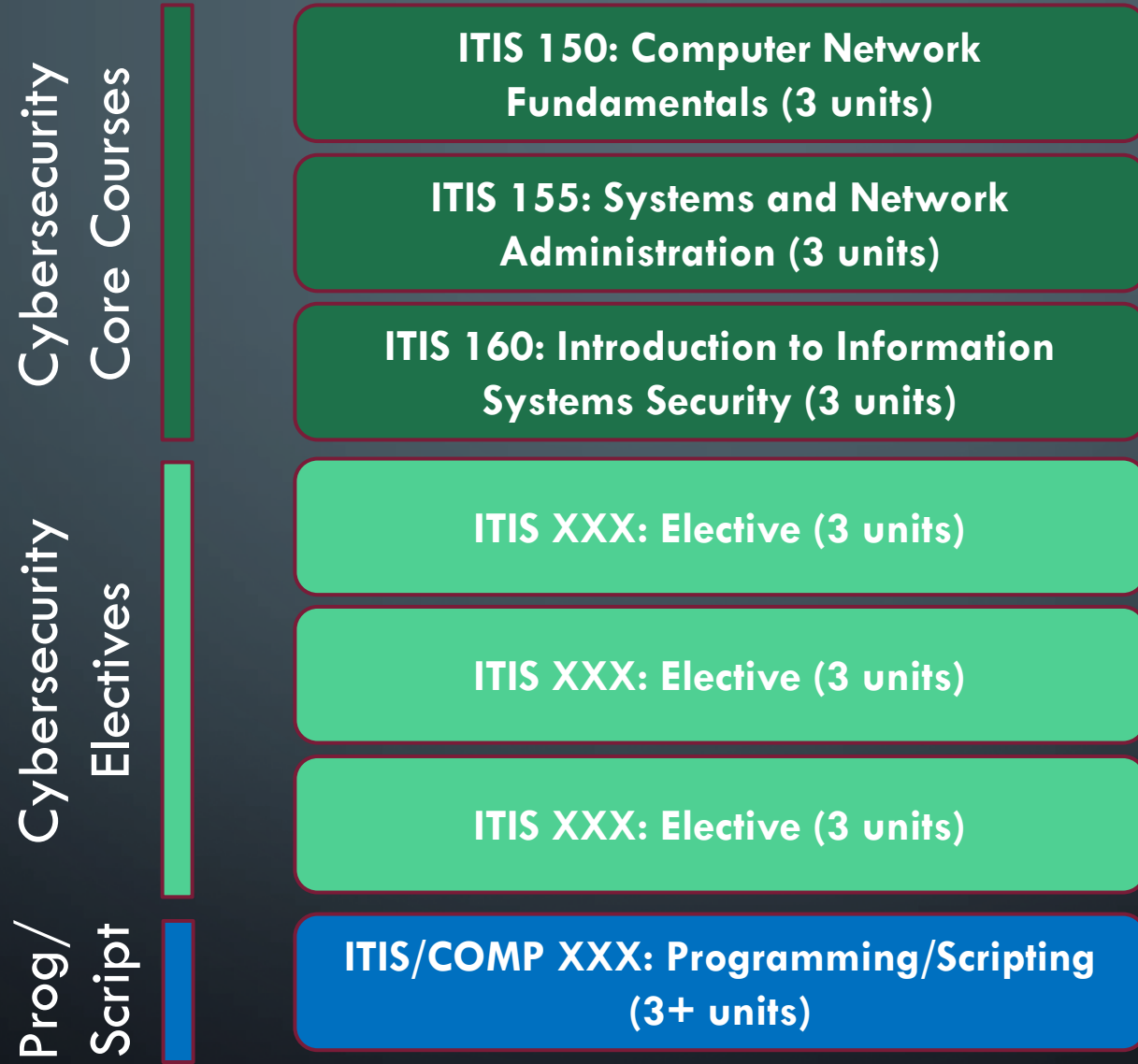
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- Director, Western Academy Support & Training Center (WASTC)

IT-related C-ID Model Curricula

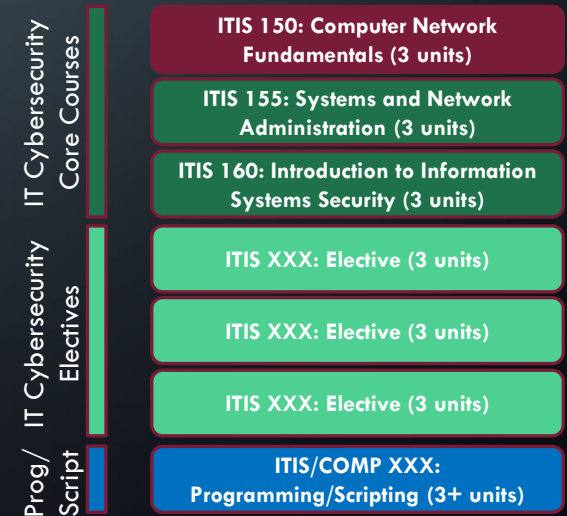
- Created as part of C-ID process
- IT Cybersecurity Model Curriculum **DRAFT** (developed in 2018; 21+ units)
 - 3 Cybersecurity Core courses
 - 3 Cybersecurity electives
 - 1 Programming or Scripting elective
 - Compatible with programs seeking DHS/NSA CAE-CD designation
- Based on IT Model Curriculum (finalized in 2015; 22+ units)
 - 4 IT Core courses
 - 2 IT electives
 - 1 MATH elective

C-ID Information Technology Cybersecurity Model Curriculum (DRAFT)



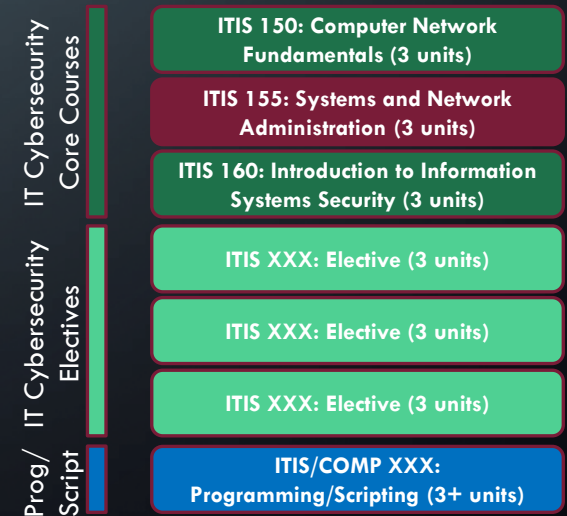
ITIS 150: Computer Network Fundamentals (3 units)

- Prepare students for CompTIA® Network+ exams
- Consider integration with Cisco Networking Academy courses (CCNA1v7)
- **DHS/NSA CAE-CD Course #2**



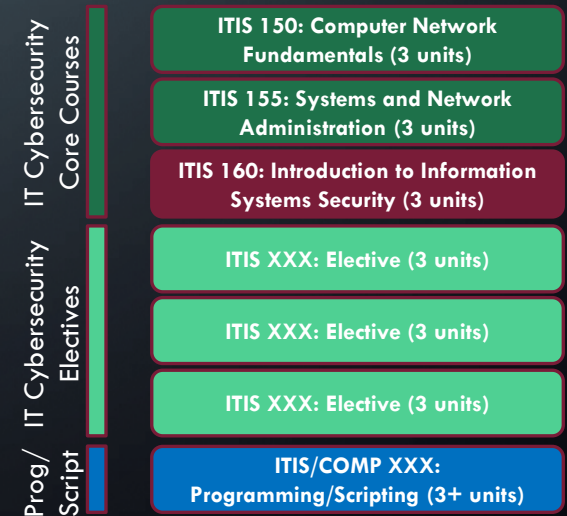
ITIS 155: Systems And Network Administration (3 units)

- Build, maintain, troubleshoot and support server hardware and software technologies
- Prepare students for CompTIA® Server+ exam
- Consider integration with Microsoft IT Academy courses
- **DHS/NSA CAE-CD Course #3**



ITIS 160: Introduction To Information Systems Security (3 units)

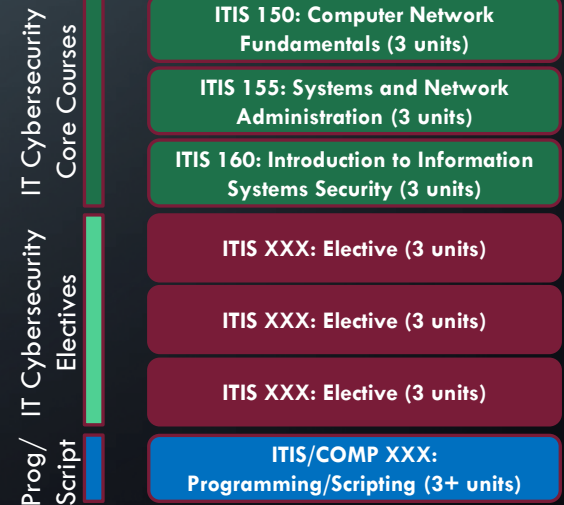
- Fundamental principles and topics of Information Technology Security and Risk Management
- Helps to prepare students for CompTIA® Security+ exam
- Advisory: Computer Network Fundamentals (ITIS 150)
- **DHS/NSA CAE-CD Course #4**



C-ID IT Cybersecurity Model Curriculum (DRAFT)

- Cybersecurity Electives (1 of 2)

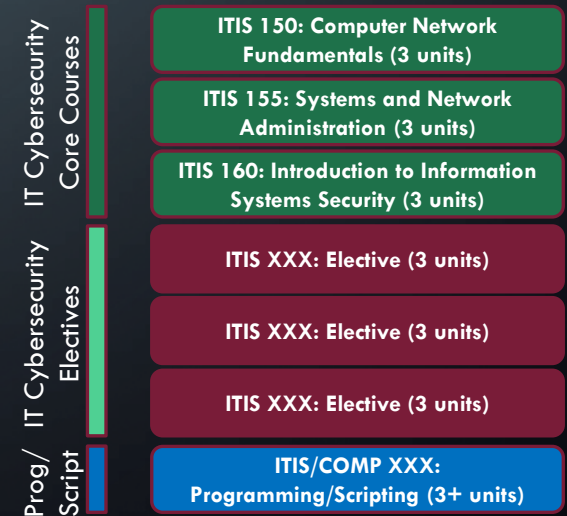
- ITIS 148: IT Risk Management (3 units) - DRAFT
- ITIS 151: Routing and Switching Essentials (3 units)
- ITIS 152: Network Security and Automation (3 units) - DRAFT
- ITIS 161: Cybersecurity Analysis (3 units) - DRAFT
- ITIS 164: Introduction to Cybersecurity - Ethical Hacking (3 units)
- ITIS 165: Computer Forensics Fundamentals (3 units)



C-ID IT Cybersecurity Model Curriculum (DRAFT)

- Cybersecurity Electives (2 of 2)

- ITIS 166: Cybersecurity Operations - CCNA CyberOps (3 units) - DRAFT
- ITIS 167: Network Security - CCNA Security (3 units) - DRAFT
- ITIS 168: IoT Security (3 units) - DRAFT
- ITIS 170: Cloud Computing and Virtualization (3 units) - DRAFT
- ITIS 171: Cloud Security Fundamentals (3 units) - DRAFT

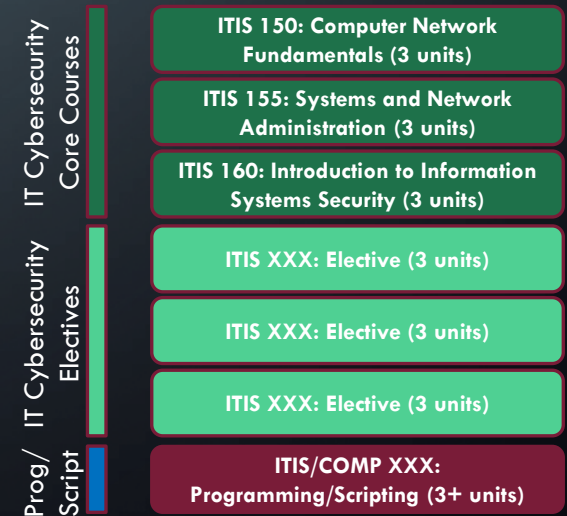


C-ID IT Cybersecurity Model Curriculum (DRAFT)

- Programming/Scripting Electives

- ITIS 130: Introduction to Programming Concepts and Methodologies (3 units)
- COMP 112: Introduction to Programming Concepts and Methodologies (3 units)
- COMP 122: Programming Concepts & Methodology I (CS1) (3 units)
- ITIS 135: Linux Shell Scripting and Programming (3 units)
- ITIS 136: Python Programming for Cyber Security (3 units)

“Some kind of programming course”
Capture Computer Science majors
Consider local industry needs
DHS/NSA CAE-CD Course #1



Questions?

- Labs
 - Professionalism
- Mathematics?
- Is a 2-year degree enough?

IT Cybersecurity
Core Courses

IT Cybersecurity
Electives

Prog/
Script

**ITIS 150: Computer Network
Fundamentals (3 units)**

**ITIS 155: Systems and Network
Administration (3 units)**

**ITIS 160: Introduction to Information
Systems Security (3 units)**

ITIS XXX: Elective (3 units)

ITIS XXX: Elective (3 units)

ITIS XXX: Elective (3 units)

**ITIS/COMP XXX: Programming/Scripting
(3+ units)**

C-ID Information Technology Model Curriculum

- Based on accepted standards
 - U.S. Department of Labor's Information Technology Competency Model (2012)
 - ACM Information Technology Competency Model of Core Learning Outcomes and Assessment for Associate-Degree Curriculum (2014)
- Aims to prepare students for industry certifications
 - Vendor-neutral or vendor-specific
- Compatible with programs seeking DHS/NSA CAE-CD designation

C-ID Information Technology Model Curriculum

Core Courses

**ITIS 110: Information & Communication
Technology Essentials (4 units)**

**ITIS 120: Business/Computer Information
Systems (3 units)**

**ITIS 130: Introduction to Programming
Concepts and Methodologies (3 units)**

OR

**COMP 112: Introduction to Programming
Concepts and Methodologies (3 units)**

**ITIS 150: Computer Network Fundamentals
(3 units)**

ITIS XXX: Elective (3 units)

ITIS XXX: Elective (3 units)

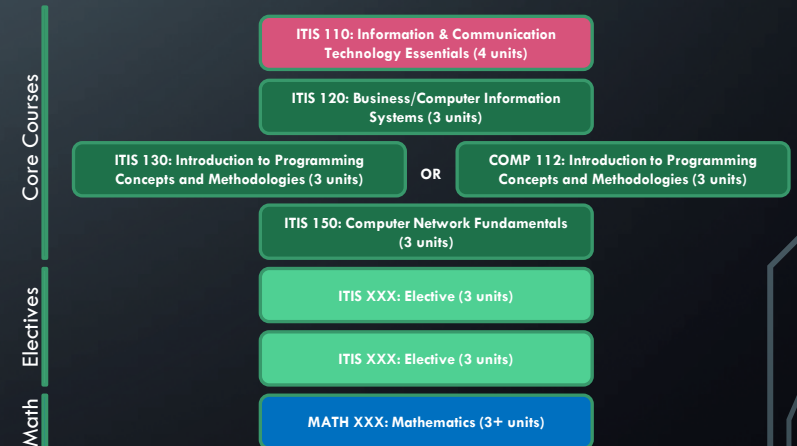
MATH XXX: Mathematics (3+ units)

Electives

Math

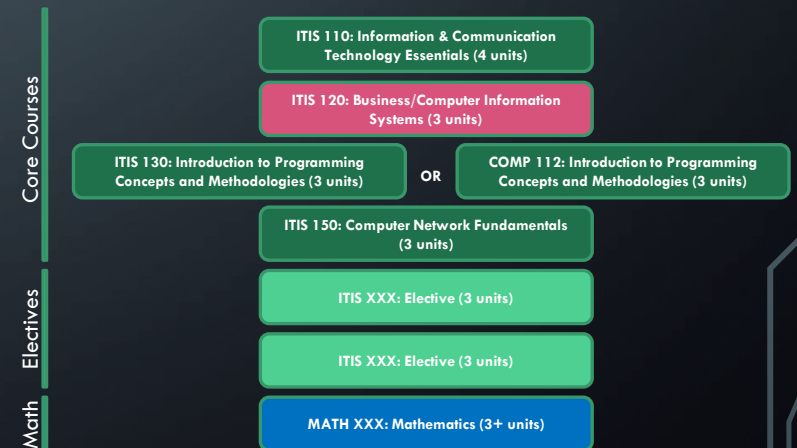
ITIS 110: Information & Communication Technology Essentials (4 units)

- Prepare students for CompTIA® A+ exams
- Consider articulation with local high schools
 - Cisco Networking Academy: IT Essentials



ITIS 120: Business Information Systems, Computer Information Systems (3 units)

- IT/IS survey course
 - Digital Society, Hardware, Software, File Management, Local Area Networks, Wide Area Networks, WorldWideWeb, Email, Digital Media, Computer History, Information Security, IT Ethics, Systems Analysis & Design, Databases
- Hands-on assignments using office applications
 - NOT an office applications course!
- Similar to BUS 140

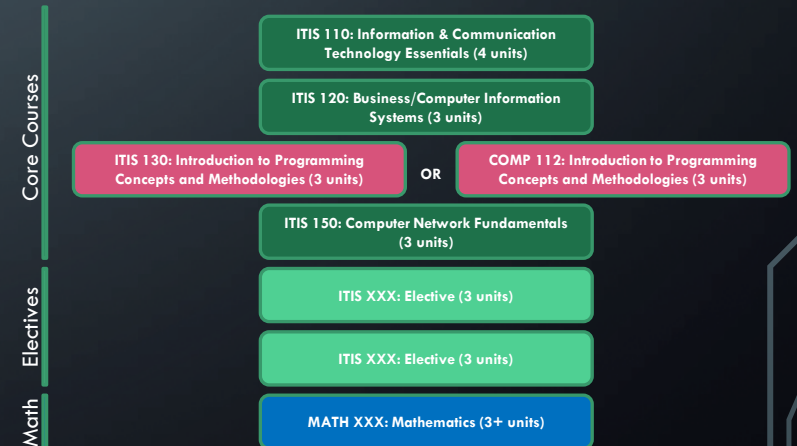


ITIS 130: Introduction to Programming Concepts and Methodologies (3 units)

OR

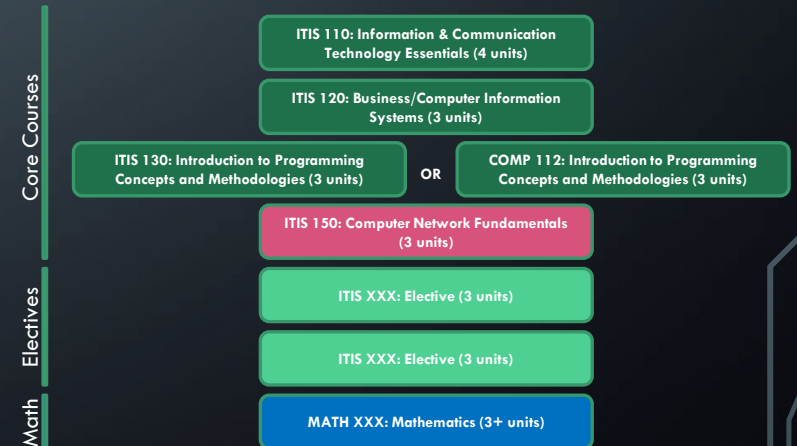
COMP 112: Introduction to Programming Concepts and Methodologies (3 units)

- “Some kind of programming course”
- Capture Computer Science majors
- Consider local industry needs
- **DHS/NSA CAE2Y Course #1**



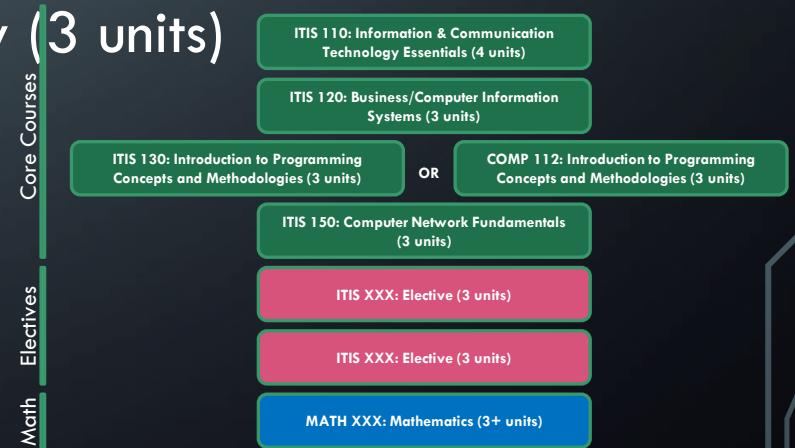
ITIS 150: Computer Network Fundamentals (3 units)

- Prepare students for CompTIA® Network+ exams
- Consider integration with Cisco Networking Academy courses
- **DHS/NSA CAE2Y Course #2**



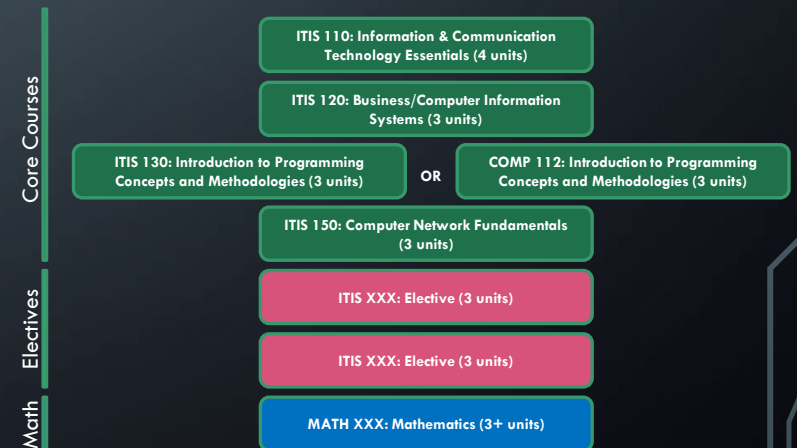
IT Model Curriculum – Electives (1 of 2)

- ITIS 140: Introduction to Systems Analysis and Design (3 units)
- ITIS 145: IT Project Management Descriptor (3 units) - DRAFT
- ITIS 151: Routing and Switching Essentials (3 units)
- ITIS 152: Network Security and Automation Descriptor (3 units) - DRAFT
- ITIS 155: Systems and Network Administration (3 units)
- ITIS 160: Introduction to Information Systems Security (3 units)



IT Model Curriculum – Electives (2 of 2)

- ITIS 164: Introduction to Cybersecurity: Ethical Hacking (3 units)
- ITIS 165: Computer Forensics Fundamentals (3 units)
- ITIS 170: Cloud Computing and Virtualization Descriptor (3 units) - DRAFT
- ITIS 172: Cloud Operations and Management Descriptor (3 units) - DRAFT
- ITIS 180: Introduction to Database Management Systems (3 units)
- BUS 115: Business Communication (3 units)



Thank you!

- Questions?

