**Likert Scale**

This outcome should remain unchanged (No Change)

This outcome needs some modification (Recommend Change)

This outcome needs to be replaced. (Replace)

**Cisco Certificate - done**

1. Analyze networking models.
2. Analyze networking protocols.
3. Configure local area networks.
4. Configure wide area networks.
5. Define common industry terms and standards.
6. Troubleshoot LAN/WAN systems.

**Computer Programming – AAS - done**

1. Demonstrate professionalism including presentation skills, utilizing research for problem solving, working independently and in teams, being accountable and meeting deadlines.
2. Analyze business problems and prepare program definitions for computerized solutions.
3. Create, document and implement computerized solutions using a variety of languages.
4. Apply testing and debugging methods to assure quality and workability of finished programs.
5. Solve problems using appropriate mathematical and/or scientific techniques.

* Computing essentials (CMP)
* mathematical and engineering fundamentals (FND)
* professional practice (PRF)
* software modeling and analysis (MAA)
* requirements analysis and specification (REQ)
* software design (DES)
* software verification & validation (VAV)
* software process (PRO)
* software quality (QUA)
* security (SEC)
  + Knowledge Areas, se2014
  + <https://www.acm.org/binaries/content/assets/education/se2014.pdf>

**CyberSecurity – AAS - done**

1. Use mechanisms available in an operating system to control access to resources.
2. Configure infrastructure server roles.
3. Investigate various countermeasures and security controls to minimize risk and exposure.
4. Support the ethical responsibility of ensuring software correctness, reliability and safety.
5. Illustrate through examples the concepts of risk, threats, vulnerabilities, attack vectors and exploits, noting there is no such thing as a perfect security.
6. Analyze known security incidents to trace and document the steps in the incident.
7. Develop technical artifacts.
8. Examine ethical issues related to cybersecurity.
9. Write a company-wide security policy.
10. Communicate effectively and efficiently with clients, users and peers.
11. Design and build virtual computing environments.
12. Use a variety of ciphers to encrypt plaintext into ciphertext.
13. Construct input validation and data sanitization in applications, considering adversarial control of the input channel.

* Data Security
* Software Security
* Component Security
* Connection Security
* System Security
* Human Security
* Organizational Security
* Societal Security
  + Knowledge Areas – csec2017
  + <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/csec2017.pdf>

**CyberSecurity – Cert - done**

1. Analyze known security incidents to trace and document the steps in the incident.
2. Use mechanisms available in an operating system to control access to resources.
3. Construct input validation.
4. Install and configure firewall rules based on business policies.
5. Investigate various countermeasures and security controls to minimize risk and exposure.
6. Examine ethical issues related to cybersecurity.
7. Demonstrate the use of proper SQL commands to retrieve specific data from a database.
8. Use protocol analyzers to identify information encapsulated in a data packet.
9. Write scripts to perform specific functions within a host and networked computing environment.

* Data Security
* Software Security
* Component Security
* Connection Security
* System Security
* Human Security
* Organizational Security
* Societal Security
  + Knowledge Areas – csec2017
  + <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/csec2017.pdf>

**Information Technology – AS -done**

1. Apply current technical practices in the core information technologies.
2. Identify the requirements to provide effective solutions for organizations or individuals.
3. Identify effective IT-based solutions.
4. Evaluate current and emerging technologies.
5. Identify the impact of technology on individuals, organizations and society including ethical, legal and policy issues.
6. Demonstrate an understanding of best practices and standards.
7. Demonstrate independent problem-solving skills.
8. Collaborate in teams to accomplish a common goal.
9. Communicate effectively and efficiently with clients, users and peers.
10. Recognize the need for continued learning throughout one's career.

* Information Management – Essential Only
* Integrated Systems Technology – Essential Only
* Platform Technologies – Essential Only
* System Paradigms – Essential Only
* User Experience Design – Essential Only
* Cybersecurity Principles / Cybersecurity Emerging Challenges – Essential + Supplemental
* Global Professional Practice / Social Responsibility – Essential + Supplemental
* Networking / Applied Networks – Essential + Supplemental
* Software Fundamentals / Software Development and Management – Essential + Supplemental
* Web and Mobile Systems / Mobile Applications – Essential + Supplemental
* Cloud Computing – Supplemental
* Data Scalability and Analytics – Supplemental
* Internet of Things – Supplemental
* Virtual Systems and Services – Supplemental
  + IT Domains – it2017
  + <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/it2017.pdf>

**Information Technology Database Administration - AAS**

1. Function effectively within teams.
2. Demonstrate professionalism, including presentation skills, utilizing research for problem solving, working independently and in teams, being accountable and meeting deadlines.
3. Implement security measures while performing database administration tasks.
4. Generate database-driven reports to support business intelligence.
5. Demonstrate appropriate ethical and security practices in handling data.
6. Establish interconnectivity of databases and web services.
7. Apply testing and debugging methods to assure quality and workability of finished product.
8. Devise backup and recovery measures in a database environment.
9. Demonstrate knowledge of the software development life cycle and how the database layer is managed and administered.

* Foundation of Information Systems
* Data and Information Management
* Information Technology Infrastructure
* Data Mining / Business Intelligence
  + Primary Database Concepts – is-2010
  + <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/is-2010-acm-final.pdf>