ACM CCECC

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Information Technology - Applied Program Objectives

Client Computing and Support

An ability to demonstrate core IT competency in client computing and user support.

- **Learning Outcomes**
  - IT. 1. Carry out trouble-shooting strategies for resolving an identified end-user IT problem.
  - IT. 2. Differentiate among various operating systems.
  - IT. 3. Explain the process of authentication and authorization between end-user devices and computing network resources.
  - IT. 4. Identify a variety of assistive or adaptive technologies and universal design considerations.
  - IT. 5. Identify basic components of an end-user IT system.
  - IT. 6. Implement a hardware and software configuration responsive to an identified scenario.
  - IT. 7. Summarize life-cycle strategies for replacement, reuse, recycling IT technology and resources.
  - IT. 8. Summarize strategies to support or train users with their IT resources.
  - IT. 9. Use a variety of practices for making end-user IT systems secure.

Database and Information Management

An ability to demonstrate core IT competency in database and information management.

- **Learning Outcomes**
  - IT. 10. Describe the data management activities associated with the data lifecycle.
  - IT. 11. Diagram a database design based on an identified scenario.
  - IT. 12. Differentiate between public and private data.
  - IT. 13. Discuss applications of data analytics.
  - IT. 14. Discuss issues relevant to dealing with very large data sets, both structured and unstructured.
  - IT. 15. Identify database administration tasks.
  - IT. 17. Use data analytics to support decision making for a given scenario.

Digital Media and Immersive Technology

An ability to demonstrate core IT competency in digital media and immersive technology.

- **Learning Outcomes**
IT. 18. Differentiate among a variety of technology-based sensory interactions.
IT. 19. Differentiate among data types, data transfer protocols and file characteristics specific to the targeted use.
IT. 20. Illustrate the activities of a digital media design process.
IT. 21. Implement communication principles into digital media design.

Networking and Convergence
An ability to demonstrate core IT competency in networking and convergence.

- **Learning Outcomes**
  IT. 22. Carry out basic computer network troubleshooting techniques.
  IT. 23. Describe the layers, protocols and components of the OSI model.
  IT. 24. Diagram the components of an integrated IT system.
  IT. 25. Differentiate among various computer networking models.
  IT. 26. Differentiate among various techniques for making a computer network secure.
  IT. 27. Summarize the flow of data through a computer network scenario.

Programming and Application Development
An ability to demonstrate core IT competency in programming and application development.

- **Learning Outcomes**
  IT. 28. Demonstrate best practices for designing end-user computing interfaces.
  IT. 29. Demonstrate the techniques of defensive programming and secure coding.
  IT. 30. Diagram the phases of the Secure Software Development Lifecycle.
  IT. 31. Discuss software development methodologies.
  IT. 32. Summarize the differences among various programming languages.
  IT. 33. Use a programming or a scripting language to share data across an integrated IT system.
  IT. 34. Use a programming or a scripting language to solve a problem.

Servers, Storage, and Virtualization
An ability to demonstrate core IT competency in servers, storage and virtualization.

- **Learning Outcomes**
  IT. 35. Differentiate among strategies for business continuity provisioning of IT resources at the enterprise level.
  IT. 36. Discuss data governance and its implications for users as well as IT professionals.
  IT. 37. Identify a variety of enterprise-level digital storage technologies.
  IT. 38. Implement an application of virtualization.
  IT. 39. Modify a system to improve data confidentiality or regulatory compliance.
  IT. 40. Summarize the implications of various cloud computing models.
  IT. 41. Summarize the security implications and risks for distributed IT systems.
Team Member

An ability to function effectively as a member of a diverse team to accomplish common goals.

- **Learning Outcomes**
  - IT. 42. Use communication, negotiation, and collaboration skills as a member of a diverse team.

Communication

An ability to read and interpret technical information, as well as listen effectively to, communicate orally with, and write clearly for a wide range of audiences.

- **Learning Outcomes**
  - IT. 43. Describe the attitudes, knowledge and abilities associated with quality customer service.
  - IT. 44. Produce technical documentation responsive to an identified computing scenario.
  - IT. 45. Use documentation or a knowledge base to resolve a technical challenge in an identified computing scenario.

Lifelong Learning

An ability to engage in continuous learning as well as research and assess new ideas and information to provide the capabilities for lifelong learning.

- **Learning Outcomes**
  - IT. 46. Discuss significant trends and emerging technologies and their impact on global society.

Professional

An ability to exhibit professional, legal, and ethical behavior.

- **Learning Outcomes**
  - IT. 47. Demonstrate professional behavior in response to an ethically-challenging scenario in computing.
  - IT. 48. Summarize the tenets of ethics and professional behavior promoted by international computing societies.

Business

An ability to demonstrate business awareness and workplace effectiveness.

- **Learning Outcomes**
  - IT. 49. Describe IT procurement processes for goods and services.
  - IT. 50. Summarize the role of IT in supporting the mission and goals of an organization.

**Association for Computing Machinery**