Information Technology Advisory Meeting

Fall 2014 Agenda

September 30, 2014 @ 6:30 pm

MSCTC Moorhead B150

**Agenda for Fall 2014**

* MSCTC welcome
* Introductions
* Review/Revision/Approval of last meetings minutes
* Membership list additions and/or removals
* Updates from last meeting
  + Robotics class name still needs changing
    - Robotics Programming
    - Robotics Building and Programming
* Computer Programming Change Requests
* Computer Security Certificate Change Requests
* Information Technology – AS
  + Math Requirement (Which of the following options would the group support?)
    - None
    - Require passing the prepared for Math0090 class
    - Require passing a class from MnTC (Minnesota Transfer Class or general education) category 4 (math)
* Network Administration and Security Questions
  + The quickly approved Network Administration and Security AAS have some issues.
    - The program has six classes with the possibility of very low enrollment.
    - The curriculum is inflexible. Any changes need to go through a long change process.
  + The question for the group is what would the ideal AAS degree (two years of school, then work) should be for this group? Currently two year programs are limited to 60 credits, with some exceptions.
    - * General Education (15 credits)
        + MnTC College Writing
        + MnTC Category 4 math
        + MnTC speech class
        + MnTC class
        + MnTC class
      * Core Technical Classes (24 credits)
        + Network course (Cisco CCNA or Network +)
        + Repair course (Cisco IT Essentials or A+)
        + Microsoft client OS course
        + Linux client OS course
        + Microsoft server course
        + Security course
        + Scripting course
        + Capstone/internship course
      * Other Technical Classes
        + Customer service
        + Informatics
        + Database
        + Web development
        + Server virtualization
        + Cloud integration
        + Wireless networking
        + Introduction to VoIP
        + Advance Windows server class
        + Additional Cisco classes
        + Robotics
        + IPv6/layer 2 and layer 3 technologies
        + Advance VoIP
        + AAA (Authentication, Authorization and Accounting)
        + Structured cabling design
        + Power Limited/structured cabling installation
        + Microsoft certification classes/topics
        + Oracle certification classes
        + NetApps certification
        + VMware certification
        + ITIL certification or class
        + Other classes proposed by members of the group
      * Technical Electives (9 credits)
        + Technical electives allow students to customize the program to their needs.
        + Technical electives also allow quicker reaction to changes by reducing the steps to make changes.
    - The initial list is a proposed outline to unify Information Technology curriculum in Minnesota.
  + ACM Committee for Computing Education in Community College IT Core Competencies
  + Mathematics Proficiency
    - The core IT competencies that are identified in this report require that students have mathematical proficiency equivalent to college-level intermediate algebra. Depending upon how a program organizes the learning outcomes for an associate-degree, further mathematics preparation may become necessary for a specific IT program.
  + Affiliated Coursework
    - Routinely, programs of study in technical fields include affiliated coursework designed to provide foundational knowledge in disciplines either prerequisite to or synergistic with the primary pursuit. In the case of Information Technology, such coursework includes mathematics and quantitative reasoning as well as written and spoken communication. Additionally, given the wealth of settings for IT careers - affiliated coursework may also include topics as far-ranging as organizational behavior and foundations of business, physics and engineering, humanities and the arts, cultural studies and world languages, and social and behavioral sciences.
  + Program Outcome Group: Communication and Interpersonal Skills
    - An ability to function effectively as a member of a diverse team to accomplish common goals.
    - 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.
  + The following courses and their associated learning outcomes support these program outcomes:
  + IT Core Competencies (aggregated)(Core)
    - Describe the attitudes, knowledge and abilities associated with quality customer service.
    - Produce technical documentation responsive to an identified computing scenario
    - Summarize strategies to support or train users with their IT resources.
    - Use communication, negotiation, and collaboration skills as a member of a diverse team.
  + Program Outcome Group: Critical Thinking, Problem Solving, and Theoretical Foundations
    - An ability to demonstrate core IT competency in client computing and user support.
    - An ability to demonstrate core IT competency in database and information management.
    - An ability to demonstrate core IT competency in digital media and immersive technology.
    - An ability to demonstrate core IT competency in networking and convergence.
    - An ability to demonstrate core IT competency in programming and application development.
    - An ability to demonstrate core IT competency in servers, storage and virtualization.
* The following courses and their associated learning outcomes support these program outcomes:
  + IT Core Competencies (aggregated)(Core)
    - Carry out basic computer network troubleshooting techniques.
    - Carry out trouble-shooting strategies for resolving an identified end-user IT problem.
    - Demonstrate best practices for designing end-user computing interfaces.
    - Demonstrate the techniques of defensive programming and secure coding.
    - Describe the data management activities associated with the data lifecycle.
    - Describe the layers, protocols and components of the OSI model.
    - Diagram a database design based on an identified scenario.
    - Diagram the components of an integrated IT system.
    - Diagram the phases of the Secure Software Development Lifecycle.
    - Differentiate among a variety of technology-based sensory interactions.
    - Differentiate among data types, data transfer protocols and file characteristics specific to targeted use.
    - Differentiate among strategies for business continuity provisioning of IT resources at the enterprise level.
    - Differentiate among various computer networking models.
    - Differentiate among various operating systems.
    - Differentiate among various techniques for making a computer network secure.
    - Differentiate between public and private data.
    - Discuss applications of data analytics.
    - Discuss data governance and its implications for users as well as IT professionals.
    - Discuss issues relevant to dealing with very large data sets, both structured and unstructured.
    - Discuss software development methodologies.
    - Explain the process of authentication and authorization between end-user devices and computing network resources.
    - Identify a variety of assistive or adaptive technologies and universal design considerations.
    - Identify a variety of enterprise-level digital storage technologies.
    - Identify basic components of an end-user IT system.
    - Identify database administration tasks.
    - Illustrate the activities of a digital media design process.
    - Implement a hardware and software configuration responsive to an identified scenario.
    - Implement an application of virtualization.
    - Implement communication principles into digital media design.
    - Modify a system to improve data confidentiality or regulatory compliance.
    - Produce simple database queries.
    - Summarize life-cycle strategies for replacement, reuse, recycling IT technology and resources.
    - Summarize the differences among various programming languages.
    - Summarize the flow of data through a computer network scenario.
    - Summarize the implications of various cloud computing models.
    - Summarize the security implications and risks for distributed IT systems.
    - Use a programming or a scripting language to share data across an integrated IT system
    - Use a programming or a scripting language to solve a problem.
    - Use a variety of practices for making end-user IT systems secure.
    - Use data analytics to support decision making for a given scenario.
    - Use documentation or a knowledge base to resolve a technical challenge in an identified computing scenario.
  + Program Outcome Group: Professionalism, Ethics, Societal Awareness and Global Perspective
    - An ability to demonstrate business awareness and workplace effectiveness.
    - An ability to engage in continuous learning as well as research and assess new ideas and information to provide the capabilities for lifelong learning.
    - An ability to exhibit professional, legal, and ethical behavior.
* The following courses and their associated learning outcomes support these program outcomes:
  + IT Core Competencies (aggregated) (Core)
    - Demonstrate professional behavior in response to an ethically-challenging scenario in computing.
    - Describe IT procurement processes for goods and services.
    - Discuss significant trends and emerging technologies and their impact on global society.
    - Summarize the role of IT in supporting the mission and goals of an organization.
    - Summarize the tenets of ethics and professional behavior promoted by international computing societies.
* http://www.capspace.org/
  + What is the group’s pleasure upon developing the curriculum?
* Discussion: Identify current and future trends/technologies
  + Topics, concerns and ideas committee members wish to communicate to MSCTC
  + Student recruiting
  + Informatics status update
  + IEEE Top 23 Technologies for 2022
    - Security
    - Open Intellectual Property
    - Sustainability
    - Massive Open Online Courses
    - Quantum Computing
    - Nanotechnology
    - 3D Integrated Circuits
    - Universal Memory
    - Multicore
    - Photonics
    - Networking and Interconnectivity
    - Software-Defined Networks
    - High-Performance Computing
    - Cloud Computing
    - Internet of Things
    - Natural User Interfaces
    - 3D Printing
    - Big Data and Analytics
    - Machine Learning and Intelligent Systems
    - Computer Vision and Pattern Recognition
    - Life Sciences
    - Computational Biology and Bioinformatics
    - Medical Robotics
      * http://www.eweek.com/database/slideshows/ieee-picks-top-23-technologies-for-2022.html?kc=EWKNLLIN09092014STR1&dni=165130962&rni=26120118

Advisory Member Functions (MSCTC Advisory Committee Guide)

* Identify specific subject areas of program inclusion
* Prioritizing the recommend subject areas
* Specifying appropriate program content level
* Reviewing program outcomes on an ongoing basis
* Assessment of program quality
* Specifying appropriate foundational skill standards for local needs
* Identifying general education and related technical skills needed by graduates
* Recommending equipment to support the program content