Information Technology – AS

Spring 2019 Outcomes

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.

**Course Outcomes**

COMM1120 - Introduction to Public Speaking

1. Demonstrate the writing and speaking process through invention, organization, drafting, revision, editing, and presentation.
2. Select appropriate communication choices for specific audiences.
3. Complete speaking evaluations with an emphasis on listening and responding ethically.
4. Demonstrate the ability to make sound rhetorical choices.
5. Write and deliver speeches that demonstrate a clear, critical perspective on speech topic.
6. Demonstrate the appropriate use of verbal and nonverbal delivery.
7. Complete group work with emphasis on cooperative learning and critical thinking.
8. Incorporate diverse and ethical supporting material in the speech-making process.
9. Evaluate the effectiveness of logical and coherent arguments for the purpose of persuasion.

MATH1114 - College Algebra

1. Analyze characteristics of linear functions and their graphs.
2. Analyze characteristics of the inverses of linear functions and their graphs.
3. Analyze characteristics of quadratic functions and their graphs.
4. Analyze characteristics of the inverses of quadratic functions (on an appropriate domain) and their graphs.
5. Analyze characteristics of polynomial functions and their graphs.
6. Analyze characteristics of rational functions and their graphs.
7. Analyze characteristics of exponential functions, their inverses and their graphs.
8. Analyze characteristics of logarithmic functions, their inverses and their graphs.
9. Analyze characteristics of radical functions.
10. Solve linear systems of equations by substitution, elimination, and graphing.
11. Determine real and complex zeros of polynomials.
12. Perform function operations including composition.
13. Use mathematical modeling to solve application problems.

CPTR1122 - Microcomputer Maintenance

1. Analyze the operation of a microcomputer.
2. Recognize microcomputer system architecture.
3. Examine the various types of computer hardware.
4. Demonstrate hardware troubleshooting skills.
5. Plan the building of a working computer.
6. Analyze the operation of system software.
7. Plan a working operating system installation.
8. Manage a working operating system.
9. Demonstrate operating system troubleshooting skills.
10. Examine the various types of networks.
11. Examine the various types of printers.
12. Examine the various types of portable microcomputers.

CSCI1110 – Informatics

1. Analyze and evaluate various data transmission methods.
2. Analyze various Information Technology solutions for applicability in various environments.
3. Evaluate data security systems in relation to current legal and social implications.
4. Differentiate between authenticity and authority of different information sources.
5. Identify and select factual information to provide a potential solution to a problem.
6. Interpret and present data conclusions in an appropriate and logical manner for the audience.
7. Organize a small group to evaluate various solutions presented from the data.
8. Evaluate and understand data security methods in relation to legal and ethical requirements in selected regions of the world.
9. Articulate the impact of Information Technology on personal ethics.
10. Evaluate the impact of Information Technology on a chosen field of study.

CPTR1170 - Web Engineering I

1. Describe components of an URL.
2. Describe the process of obtaining an Internet domain address.
3. Describe the need for, and legal requirements of, Web site policies.
4. Describe layouts, structure, design principles, and considerations for well-designed Web sites.
5. Evaluate Web sites using principles of good format, structure, design, and programming practices.
6. Install and configure Web page programming tools.
7. Use current Web programming languages to create and maintain a Web page.
8. Incorporate an e-mail link on a Web page.
9. Incorporate internal and external hypertext links on a Web page.
10. Incorporate tables on a Web page.
11. Incorporate forms on a Web page.
12. Create client-side scripting code to handle error checking in Web forms.
13. Describe the security concerns of Web server administrators.
14. Configure Web server software.
15. Compare Web server operating systems and software.

CPTR1106 - Microcomputer Databases

1. Create database reports.
2. Create table relationships.
3. Define referential integrity.
4. Create database queries.
5. Manipulate database data.
6. Perform data import operations.
7. Create data entry forms.
8. Demonstrate database programming concepts.
9. Create database tables.
10. Create and manage a switchboard.
11. Create database macros.

CPTR1178 – Robotics

1. Examine current robot design.
2. Manage a robot building schedule.
3. Build robots to meet requirements.
4. Manage robot motion systems.
5. Manage robot sensor systems.
6. Create robot control programs.
7. Administer robot communication systems.
8. Demonstrate troubleshooting skills.
9. Design test procedures for robot systems.
10. Manage robot power consumption.
11. Describe current automation trends.
12. Document robot operation.

CPTR1108 - CISCO 1

1. Compare various networking models.
2. Compare the various types of networking media.
3. Demonstrate a working knowledge of the TCP/IP protocol stack.
4. Recognize the components involved with assembling a network.
5. Design and assemble small working networks.
6. Recognize the tools necessary to troubleshoot networks.
7. Solve network hardware and software problems.
8. Use network monitoring tools to troubleshooting equipment failures.
9. Explain IP addressing and subnetting.

3 credits MnTC

ENGL1101 - College Writing

1. Demonstrate the writing process through invention, organization, drafting, revision, editing and presentation.
2. Participate effectively in groups with emphasis on listening, critical and reflective thinking and responding.
3. Locate and evaluate information from diverse academic sources.
4. Synthesize information from diverse academic sources.
5. Construct logical and coherent arguments.
6. Use authority, point-of-view and individual voice and style in writing.
7. Respond critically via discussion.
8. Respond critically via writing.
9. Employ syntax and usage appropriate to academic disciplines and the professional world.
10. Select appropriate communication choices for specific audiences.
11. Use a discipline-appropriate style guide to responsibly credit and document information.

HUM2236 - Technology in the Humanities

1. Students will demonstrate an understanding of the relationship between advances in technologies and changes in the daily lives of societies that adopt them.
2. Students will be able to recognize how various technologies have impacted on today's social order and anticipate advantages and difficulties associated with emerging technologies
3. Students will be able to draw connections between advances in technology and inevitabilities such as changes in how education is demanded and delivered
4. Students will be able to identify specific philosophical, political and social movements and how they helped foster technical innovation or prevent natural technical evolution
5. Students will recognize how changes in technology such as paint, sound recordings and motion pictures have affected the range of expressions available to artists.
6. Students will demonstrate the importance of understanding technology both an aid to ethical and productive self expression and a hindrance to responsible social interaction.
7. Students will draw connections between modes of expression and associated limitations resulting from inequities in education and economic and social class.
8. Students will demonstrate an understanding of how major technical advances such as the printing press promoted global communication and cultural exchanges.
9. Students will be able to identify which applications of modern technology improve ethnic diversity and which applications promote intolerance.
10. Students will be able to identify which apparently small improvements in military technology were responsible for major political changes on a global scale.
11. Students will be able to posit workable solutions for addressing inequities in matters of global social and economic development imposed by changes in technology.

3 credits MnTC

CPTR2224 - Linux I

1. Create Linux accounts.
2. Manage Linux accounts.
3. Prepare appropriate documentation.
4. Analyze graphical environments.
5. Write simple shell scripts.
6. Manage application software.
7. Manage security.
8. Evaluate fault-tolerance solutions.
9. Use appropriate software and commands.
10. Manage printing.

PSYC1200 - General Psychology

1. Describe the history of psychology and how psychology is distinct from related disciplines such as sociology and philosophy.
2. Adopt the framework of psychological science (correctly use terminology and concepts, engage in scientific problem-solving).
3. Compare and contrast the major theoretical approaches to psychology.
4. Explore the biological basis for behavior.
5. Contrast how abnormal behavior might be explained and treated by different schools of psychology.
6. Analyze the ethical nature of psychological experimentation on animals and people.
7. Demonstrate knowledge of legal rights of individuals with mental health disorders.
8. Describe scientific research methods used in psychology.
9. Apply course concepts to one's own daily life.
10. Utilize critical thinking skills (e.g., evaluate information quality, distinguish between causation and correlation, adopt multiple perspectives for a given problem).
11. Demonstrate an understanding and appreciation for aspects of human diversity as it applies to psychology.
12. Demonstrate an understanding of key topics in psychology.

CPTR2272 - Network Operating Systems

1. Manage network accounts and groups.
2. Configure remote network access.
3. Manage network services.
4. Design network domain structures.
5. Describe multi-domain network structures.
6. Create fault-tolerant resource plans.
7. Manage security settings and policies.
8. Analyze network resource utilization.
9. Document network configuration.

CPTR2236 - Network Security

1. Identify network security threats.
2. Administer encryption and authentication for wireless networks.
3. Examine protecting advanced communications.
4. Identify Web related threats.
5. Perform network hardening.
6. Examine e-mail threats.
7. Configure VPNs for secure sessions.
8. Analyze remote access security and social engineering threats.
9. Identify software exploits.
10. Examine major types of attacks on information systems.
11. Identify the factors in a secure network strategy.
12. Practice securing web communications utilizing SSL/TLS.
13. Examine cryptography.
14. Apply IPSec policies.
15. Explore the basic computer forensics methods.
16. Plan a patch management strategy for network servers.
17. Analyze the role of firewalls, routers and switches in security.
18. Examine intrusion detection systems.

8 Credits MnTC

CPTR1001 - Introduction To Programming and Scripting

1. Describe the features and syntax of a programming language.
2. Understand how software can be written to solve business problems.
3. Use debugging and testing to create error-free code.
4. Demonstrate industry standard code development techniques.
5. Develop logic structures.
6. Develop loop structures.
7. Develop control structures.
8. Understand datatypes.
9. Understand functions.
10. Create, update, and process data files.
11. Understand techniques required for security in computer programming.