Information Technology (IT) Minor

Effective: 09/01/2021

Students seeking a minor in Information Technology are required to take 5 courses as follows.

Required Courses	Credits	Prerequisites
ITE 100 Fundaments of Information Systems and Technology	3	No
ITE 105 Problem Solving with Algorithms	3	No
ITE 200 Computer Hardware and Software	3	ITE 100
ITE 215 Computer Networks	4	ITE105, ITE 100
Electives		
Choose any <u>one</u> out of the following		
ITE 230 Web Systems	4	ITE105, ITE100
ITE 315 Information Security	4	ITE 215
ITE 320 Information Management Systems	4	ITE 230
Total Credits	**17**	

For more information, please contact:

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Information Technology (IT) Minor Course Descriptions

ITE 100 Fundamentals of Information Systems and Technology 3 cr.

Catalog description:

This course provides an overview of fundamental areas within the field of Information Technology, introducing basic vocabulary, central concepts, and typical applications. The topics discussed include computer hardware, software, communications fundamentals, system development, information management, workforce considerations, and related societal, legal and ethical issues. Three lecture hours per week.

Prerequisite: High school algebra I & II plus experience with a window-based operating system and the use of email and a word processor. Recommended for students with no prior programming experience.

ITE 105 Problem Solving with Algorithms 3 cr.

Catalog description:

This course serves as an introduction to programming. Using flow charts, pseudo-languages, and software development strategies, students will learn techniques for identifying and selecting solutions to problems by designing algorithms, using stepwise refinement and structured programming techniques. Students will design algorithms using pseudo-code, implement algorithms using a simplified programming environment, and participate in hands-on debugging, testing, and documenting activities. Topics include principles of programming, the logic of constructing a computer program, integrating modules into a cohesive application, and fundamentals of programming languages. In-class exercises allow students to practice these techniques while solving assigned problems. Three lecture hours per week.

Prerequisites: High school algebra I & II plus experience with a window-based operating system and the use of email and a word processor. Recommended for students with no prior programming experience.

ITE 200 Computer Hardware and Software 3 cr.

Catalog description:

This course surveys the fundamentals and skills required to understand and work with computer hardware and software. Topics include system architecture that goes into details of the roles and assembly and disassembly of various computer parts. System diagnostics, upgrades, maintenance, and documentation are taught as the next steps. Instruction includes lectures, demonstrations, and hands-on work. Three lecture hours per week.

Prerequisites: ITE1 00

ITE 215 Computer Networks 4 cr.

Catalog description:

This course begins with an introduction to computer networks, including hardware, software,

troubleshooting, and maintenance. IT professionals need to understand various components of the networking infrastructure of an organization as well as the various protocols and standards used to implement these infrastructures. TCP/IP stack will be presented with the discussion of OSI layered model and data/control flow through each layer using top-down or bottom-up approaches. Understanding of networking protocols, TCP/IP stack, and troubleshooting, and maintenance of networks will be given through class lectures as well as labs. Three lecture hours and three hours of scheduled laboratory per week.

Prerequisites: ITE105, ITE100

ITE 230 Web Systems **4 cr.**

Catalog description:

This course provides an introduction to web systems and technologies, including an overview of architecture of a website, implementation, evaluation and testing of web-based applications and programming aspects of web development (web content development, markup languages coding, client-side and serve-side application development). Topics include understanding of Web standards, description of basic components of a website, general principles of web interface design and development, use of databases, multimedia, and structure of the interface between a website and the Internet. Social, ethical and legal issues of web usage (e-commerce, social networks, etc.) will also be discussed. Three lecture hours and three hours of scheduled laboratory per week.

Prerequisite(s): ITE105, ITE100

ITE315 Information Security **4 cr.**

Catalog description:

The course covers a unified view of information security that examines the closely related areas of information security, software security, networks, web security, and forensics using a common set of underlying security principles. Students will get an understanding of how to model secure environments and how to implement these starting from standalone computers, operating systems, and then going towards distributed networks and web. Each of the security areas is examined in sufficient detail for students to understand the complexity of modern threats and the corresponding sophistication of the software and hardware that is designed to counter these threats. Three lecture hours and three hours of scheduled laboratory per week.

Prerequisites: ITE 215

ITE320 Information Management Systems **4 cr.**

Catalog description:

It is the role of the IT professional to develop, deploy, manage and integrate data and information systems to support the organization. At a fundamental level, Information Management Systems address these issues by providing mechanisms of storing, searching, updating, and retrieving information. Underlying all of these functionalities are the concepts of a file and file organization, upon which is built the concept of an information management system. This course presents the fundamental concepts of data

organization architectures, database management system models and query languages, principles of data modeling, and techniques for managing a database environment. Contemporary distributed network-based data storage mechanisms are also discussed. Three lecture hours and three hours of scheduled laboratory per week.

Prerequisite: ITE 230
