

## College of Information Systems & Technology

Bachelor of Science in Information Technology with a Concentration in Networking and Telecommunications

The Bachelor of Science in Information Technology (BSIT) program is focused on the acquisition of theory and the application of technical competencies associated with the information technology profession. The courses prepare students with fundamental knowledge in core technologies, such as systems analysis and design, programming, database design, network architecture and administration, web technologies and application development, implementation and maintenance.

This undergraduate degree program includes 45 credits in the required course of study and 15 credits in the concentration. Some courses have prerequisites. In addition, students must satisfy general education and elective requirements to meet the 120-credit minimum, including a minimum of 42 upper-division credits required for completion of the degree. At the time of enrollment, students must choose a concentration.

The Networking and Telecommunications concentration is designed to provide specific theories, competencies, and skills necessary for success as a network administrator. This concentration is developed with a focus on the networking+ body of knowledge, including local area networks and wide area networks.

Note: The diploma awarded for this program will read as: Bachelor of Science in Information Technology and will not reflect the concentration. Concentrations are reflected on the transcript only.

## Information Technology Foundation

### GEN 300\* Skills for Professional Development

This course examines the skills necessary for successful critical thinking, teamwork, research, and communication. The course is designed to aid adult learners in acquiring and improving the core competencies that are necessary at University of Phoenix. Students will examine their reasons for returning to school, and develop strategies for achieving educational goals in school, work, and personal settings. Students will also be introduced to the University library and learn how to access its resources successfully. (3 credits)

\* For flexibility in scheduling, campuses are permitted to schedule GEN 200 to satisfy GEN 300 requirements.

### CIS 205 Management Information Systems

This course introduces the fundamentals of computer systems and the role of information processing in today's business environment. An overview is presented of information systems, systems development, operating systems and programming, database management, networking and telecommunications, and the Internet. (3 credits) Prerequisite: GEN 300

The U.S. Department of Education requires the University to provide the following information about each of our programs that lead to gainful employment in a recognized profession.

83% of students who completed this program during the most recent federal award year did so within normal time.<sup>1</sup>

#### Related occupations<sup>2</sup>

Network and Computer Systems Administrator #15-1142.00

#### Program costs<sup>3</sup>

**Tuition and fees** \$33,800 to \$74,575  
Includes cost per credit, application fee, and fees for resources (books/eResources) for students completing the program in normal time.

#### Median graduate debt<sup>4</sup>

<b>Federal</b>	\$31,347
<b>Private</b>	\$0
<b>Institutional</b>	\$0

<sup>1</sup> The on-time completion rate identifies the percentage of students completing this program during the most recent federal award year who completed it within "normal time." The term "normal time" means the length of time it would take a student to complete this program if the student is continuously enrolled, takes one course at a time, and successfully completes each attempted course. Students enrolled in this degree program are typically nontraditional students. Students may exceed "normal time" for a variety of reasons, including, but not limited to, internships, practicums, clinical rotations, student teaching or administrator experiences required for licensure.

<sup>2</sup> Graduates of this program will be educationally qualified to enter the occupations listed. Visit [onetonline.org](http://onetonline.org) for job descriptions.

<sup>3</sup> The range provided represents the sum of tuition and typical fees required to complete the program within normal time, based on the University's 2011/2012 tuition levels. The actual costs that will be incurred by a particular student to complete this program will depend upon factors specific to that student. Tuition rates for this program may vary due to factors such as: (i) geographic location of the student; (ii) modality of coursework; (iii) military service; and (iv) future changes in tuition rates. The number of credits required for a particular student to complete the program will be dependent upon various factors, including: (i) transfer credits available; (ii) repeated coursework; and (iii) completion of additional specializations within this program. Please contact an Enrollment Advisor for additional information.

<sup>4</sup> The figure represents the median amount of debt incurred by students who completed the program during the relevant federal award year. The actual amount of debt a particular student will incur to complete this program is dependent on various factors specific to the student. Please contact an Enrollment Advisor for additional information.

# Bachelor of Science in Information Technology with a Concentration in Networking and Telecommunications

---

## **PRG 210 Fundamentals of Programming with Algorithms and Logic**

This course provides students with a basic understanding of programming development practices. Concepts covered include the application of algorithms and logic to the design and development of computer programs to address the problem solving requirements associated with business information systems. This course will cover procedural programming concepts including data types, control structures, functional decomposition, arrays, and files. (3 credits) Prerequisite: GEN 300

## **WEB 236 Web Design I**

This course introduces effective web design principles and the essential role of the web designer in today's business environment. Topics covered include site architecture, page layout, navigation, content, functionality and usability. Students will evaluate existing web sites and apply best practices to prototype a unique design using a web-authoring application. (3 credits) Prerequisites: GEN 300 and CIS 205

## **WEB 237 Web Design II**

This course introduces development tools and techniques used to publish web pages on the World Wide Web. Students use basic hypertext markup language, scripting and presentational technologies to create web sites without the aid of a software authoring application. Topics include XHTML, CSS, JavaScript™, server hosting, site publication, site maintenance and search engine optimization. (3 credits) Prerequisite: WEB 236

## **ENG 221 Technical Writing Fundamentals**

This course covers the fundamentals and best practices of using written communication in business and in the information technologies. Topics include strategies, techniques, and nuances for producing emails, memos, reports, proposals, project specifications, and user manuals, as well as other technical documents. (3 credits) Prerequisite: GEN 300

## **BSA 310 Business Systems**

This course reviews common business systems and their interrelationships. Business systems covered include finance, accounting, sales, marketing, human resources, legal and operations. Emphasis is placed upon the inputs and outputs of information systems, the potential for integration of the systems, and information systems security. (3 credits) Prerequisite: GEN 300

## **BSA 375 Fundamentals of Business Systems Development**

This course introduces the fundamental, logical, and design considerations addressed during system and application software

development. It provides a solid background in information systems analysis and design techniques through a combination of theory and application. The systems development life cycle will be fundamental to the course. (3 credits) Prerequisites: GEN 300 and CIS 205

## **CMGT 410 Project Planning and Implementation**

This course provides the foundation for understanding the broad concepts of successful planning, organization, and implementation within the realm of information technology. This course uses real-world examples and identifies common mistakes and pitfalls in project management. Topics covered include project scoping, estimating, budgeting, scheduling, tracking and controlling. (3 credits) Prerequisite: GEN 300

## **DBM 380 Database Concepts**

This course covers database concepts. Topics include data analysis, the principal data models with emphasis on the relational model, entity-relationship diagrams, database design, normalization, and database administration. (3 credits) Prerequisites: COMM 215, MTH 209, and PRG 210

## **POS 410 SQL for Business**

This course covers Structured Query Language (SQL) that provides a unified language that lets you query, manipulate, or control data in a business applications environment. (3 credits) Prerequisites: COMM 215, MTH 209, and DBM 380

## **NTC 360 Network and Telecommunications Concepts**

This course provides an overview of telecommunication systems in a business environment. Topics covered include voice communications, standards, transmission, networks, and internetworking. (3 credits) Prerequisites: GEN 300 and CIS 205

## **PRG 420 Java® Programming I**

This course introduces object-oriented programming in the context of business applications development. The basics of the Java® programming language are covered. (3 credits) Prerequisites: COMM 215, MTH 209, and PRG 210

## **PRG 421 Java® Programming II**

This course continues the subject in PRG/420, Java® Programming I. Topics include designing complex applications and the use of data files. (3 credits) Prerequisites: COMM 215, MTH 209, and PRG 420

# Bachelor of Science in Information Technology with a Concentration in Networking and Telecommunications

---

## **CMGT 445 Applications Implementation**

This course will cover the process and issues associated with the implementation of a computer application information system. Topics will include the processes associated with sponsor and stakeholder approvals, end-user training, technical staff training, conversion from existing application(s) and integration into the information system production environment. This course will also examine the use of development and testing environments and the testing procedures related to the implementation of a computer application information system. (3 credits) Prerequisites: All other courses in this program

## Networking and Telecommunications Concentration

### **NTC 240 Introduction to LAN Technologies**

This foundational course covers local area network topics including rationale for networking, Open Systems Interconnection (OSI) models, common network topologies and architecture, client/server concepts, basic hardware devices and usage, and basic networking security concepts. (3 credits) Prerequisites: COMM 215, MTH 209, and CIS 205

### **NTC 241 Introduction to W-LAN Technologies**

This course explores concepts of wireless networking systems, including wireless networking and topologies; hardware protocols; hardware selection and implementation; interfaces with local area network (LAN), metropolitan area network (MAN), and wide area network (WAN) networks; basic wireless security; and network integration concepts. (3 credits) Prerequisite: NTC 240

### **NTC 242 Introduction to WAN Technologies**

This course covers wide area networking concepts and its interface with metropolitan area networks (MAN) and local area networks (LAN). The course will cover telecommunication technologies, backbone technologies, hardware device protocol, hardware selection and usage, and basic WAN security considerations and planning. (3 credits) Prerequisite: NTC 241

### **CMGT 244 Introduction to IT Security**

This course introduces general concepts of information systems security. Content includes governmental views, positions, and processes of national security. Coursework explores other concepts, including contingency and business resumption planning, backup

schemes and implementation strategies, as well as various types of invasive actions and prevention measures. (3 credits)

Prerequisite: NTC 240

### **POS 420 Introduction to UNIX®**

This course is a survey of the UNIX® operations. The student will gain an understanding of the internal operations of the UNIX® system, which enables the user to make efficient use of files, file systems and processes. Commands for efficient management of UNIX® system files, file systems and processes are also examined. (3 credits) Prerequisite: NTC 360