APPLIED INFORMATION TECHNOLOGY (AIT)

AIT 103 Online Seminar (1 credits)
This two-week course is designed to prepare students to effectively participate in an asynchronous learning environment. You will receive an introduction to CLASSES, the software Pace University uses to deliver courses for this online program, and will learn essential Internet concepts. You must successfully complete this course to continue with regular classes.
Prerequisites: This course does not have a prerequisite.

AIT 107 Computer Applications for Telecommunications (4 credits)
This is an introductory course in basic orientation to computer hardware and implementation of software applications in telecommunications. Students will use various software packages to create documents, spreadsheets, graphs, databases and slide show presentations. Students will use the knowledge gained to solve problems and transfer information via electronic media.
Prerequisites: This course does not have a prerequisite.

AIT 109 Global Telecommunications Essentials (4 credits)
This course will introduce the students to a board range of telecommunications concepts covering the wired and wireless environment. This covers the fundamentals of sound, the OSI model, carrier networks, TCP/IP and Internet basics. We will also introduce the concept of big data and cloud computing along with the growing impact of Voice Over IP (VoIP) in business, personal, and carrier environment. Basic radio and wireless concepts will be introduced. In addition, cyber security and impacts to the wired and wireless concepts networks will be discussed.
Course Rotation: Fall, Spring and Summer

Prerequisites: This course does not have a prerequisite.

AIT 111 AC/DC Electrical Circuits for Telecommunications (4 credits)
This course introduces students to passive AC and DC components and covers basic theory and operation of electrical circuits. Computer labs using circuit simulation software labs will give students the knowledge and skills required by the telecommunications industry.
Prerequisites: This course does not have a prerequisite.

AIT 120 Business and Technical Communications for Telecommunications (4 credits)
This course will provide students with the basic foundation on which to build and improve communication skills for the workplace. Students will create business and technical correspondence, technical reports, user manuals, and technical instructions. Emphasis will be placed on working collaboratively in an online environment.
Prerequisites: This course does not have a prerequisite.

AIT 196C Topic: PC Applications for Telecommunication: Access (1 credits)
In this course, the student will learn how to create and test macros that open forms and that preview reports and export reports. The student will create a menu form with command buttons as well as a menu form with an option group, which is an object that enables the student to make a selection by choosing the option button corresponding to the student choice. The student will also create and use user interface (UI) macros in forms. The student will be introduced to the database language called SQL (Structured Query Language) is a very important language for querying and updating databases. It is the closest thing to a universal database language, because the vast majority of database management systems, including Access, use it in some fashion. Although some users will be able to do all their queries through the query features of Access without ever using SQL, those in charge of administering and maintaining the database system should be familiar with this important language. The student can also use Access as an interface to other database management systems, such as SQL Server. Using or interfacing with SQL Server requires knowledge of SQL. Virtually every DBMS supports SQL.
Prerequisites: AIT 107 or CIS 101 with minimum grade of D.

AIT 196J Introduction to SQL (1 credits)
This course introduces the syntax of structured query language. Students work with a small Microsoft Access database and practice with basic SQL commands to learn the fundamentals of the language. The course will provide students with multimedia presentations to reinforce the laboratory activities used to create the querying commands in addition to discussion boards.
Prerequisites: This course does not have a prerequisite.

AIT 233 Wireless LANs (4 credits)
This course provides a hands-on guide to planning, designing, installing and configuring wireless LANs. The subject matter corresponds to that of the Certified Wireless Network Administrator (CWNA) certification. The course offers an in-depth coverage of wireless networks with extensive step-by-step coverage of IEEE 802.11 b/a/g/pre-n implementation, design, security, and troubleshooting. Material is reinforced with online projects using equipment from two of the principal wireless LAN vendors, Cisco and Linksys.
Prerequisites: AIT 109 with minimum grade of D.

AIT 235 Telecommunications II: Signal Transmissions for Telecommunications (4 credits)
Concentration of this course will be on transmission and data communications. Students will study the electromagnetic spectrum, network models and standards, signals, decibels, modulation and transmission media. The course will also cover the study of data communications, LANs, LAN switching, the Internet and the World Wide Web. In addition, a study of wireless transmission, cellular telephony, satellite communications and an introduction to IP routing and routing protocols will be included. Students will have an understanding of how networks work at the infrastructure, network and applications layers; how they transfer data; how network protocols enable communication; and how lower network protocols support upper ones.
Prerequisites: AIT 109 with minimum grade of D.

AIT 263 Mobile Technology (4 credits)
This course expands the previous examinations and reviews of mobile and cellular technologies, applications and services in AIT 109, AIT 170, AIT 235 and AIT 263. This course will achieve its objectives through a discussion of devices, applications, and implications in the ever-changing world of mobile. In completing this course, students will have the opportunity to increase and enhance their knowledge of mobile technologies and its impact in video, voice and data.
Prerequisites: AIT 109 with minimum grade of D.

AIT 371 Fiber Optics (4 credits)
The telecommunications network has been evolving from one that is electronic in nature to an electro-optical networking system. Fiber optics technology is playing a major role in this evolution. In addition, further developments are expected to result in an all-optical core network with the highest transmission speeds. Technicians working in the field will need an understanding of this important subject matter. This course covers the fundamentals of fiber optics and related optical components. Additional discussion is given on how these devices are being used in current optical telecommunications networks. Topics include the physical principles governing optical fiber, fiber optic network architectures, optical switching and routing, and the impact of optical fiber on the telecommunications industry.
Prerequisites: AIT 109 with minimum grade of D.

AIT 381 Emerging Broadband Technologies (4 credits)
This course covers topics of increasing importance in the area of broadband technologies. Following a review of TCP/IP protocols, the course examines the basics of network tunneling and security as applied to Virtual Private Networks (VPN). The latest tunneling technologies such as point-to-point tunneling protocol (PPTP) and layer 2 tunneling protocol (L2TP) are discussed. Security concepts such as threats and attacks, intrusion detection, firewalls, cryptography, authentication, and security key management are covered. The IPSec protocols and Quality of Service (QoS) concepts are also covered.
Prerequisites: AIT 109 with minimum grade of D.

AIT 382 Voice Over Internet Protocol Technologies (4 credits)
This course covers Voice over IP and Internet Telephony. Extensive coverage of the emerging protocol standards H.323, Session Initiation Protocol (SIP), and Media Gateway Control Protocol (MGCP) is given. Voice transmission, voice digitization, voice coding and compression are discussed. Voice over IP network components, routers, and gateways are examined as are Voice over IP network examples and the current industry status in the USA.
Prerequisites: AIT 109 with minimum grade of D.

AIT 383 Emerging Wireless Technologies (4 credits)
This course covers emerging wireless telecommunications including cellular telephony, next generation (3G) wireless technologies, and wireless LANs. Topics include antennas and propagation, signal encoding techniques, spread spectrum, error detection and correction, cellular wireless networks, wireless local loop, mobile IP and wireless application protocol (WAP), and the local area network IEEE 802.11 and Bluetooth protocols. Also considered are wireless security models, threats and solutions.
Prerequisites: AIT 109 with minimum grade of D.