

INFORMATION TECH FOUNDATION (ITFN)

ITFN 1101. Foundations-Information Tech. (3)

This course introduces Information Technology (IT), covering the fundamental components of IT, evolution, and societal impact. Students explore hardware, software, and essential aspects of networks, security and web design. The programming module emphasizes structured languages, and the spreadsheets and databases section impart skills in data analysis, storage, and manipulation. The principles of designing information systems is also covered.

Prerequisites: (MATH 0099 or MATH 0988 or MATH 0989 or COMM with a score of 40 or CPTC with a score of 055 or (CPTC with a score of 030 and CPTC with a score of 050) or CPTC with a score of 030 or S02 with a score of 420 or A02 with a score of 17 or MATH 1101 or MATH 1111 or MATH 1112 or MATH 1112A or MATH 1113 or MATH 1241 or MATH 1501)

ITFN 1201. Foundations of Database Design (3)

This foundational course presents terminology, basic concepts, and applications of database processing including file organization and data structures. The course emphasizes database design using various modeling techniques; database implementation using the relational model, normalization, and SQL. Students will design, create and process a database to demonstrate competency in the course content.

Prerequisites: (WBIT 1100 or ITFN 1101) and (MATH 1101 or MATH 1111 or MATH 1112 or MATH 1112A or MATH 1113 or MATH 1241 or MATH 1501) and ENGL 1101

ITFN 1401. Foundations of Webmaster (3)

This course will focus on the hands-on business of writing HTML code, knowledge of basic control structures, language syntax, and file structures. Students will learn to plan and design web sites for target audiences. Students will learn techniques for client interfacing, project development, and web page mock-up. A best practices didactic will focus on hypertext design and navigation, application interface, copyright and ownership issues, ethics, and privacy, licensing and trademark issues.

Prerequisites: (WBIT 1100 or ITFN 1101) and (MATH 1101 or MATH 1111 or MATH 1112 or MATH 1112A or MATH 1113 or MATH 1241 or MATH 1501) and ENGL 1101

ITFN 1502. Fnds. of Networking & Security (3)

Introduction to terminology and applications of communications and networking as essential elements of information technology and information systems that includes OSI and TCP/IP models. Students gain familiarity with concepts of data communication infrastructure, industry trends, hardware, software, media, transmission equipment, wireless and satellite communication, and network security concepts. Includes an emphasis on LAN architecture, standards, protocols and implementation.

Prerequisites: (ITFN 1101 or WBIT 1100) and (MATH 1101 or MATH 1111 or MATH 1113 or MATH 1241 or MATH 1501) and ENGL 1101

ITFN 1502L. Fnds. of Networking Sec. Lab (1)

Laboratory accompanying ITFN 1502.

ITFN 2214. Web Application Development (3)

This course exposes students to techniques used in database design and web application development for interactive content. Interactive web-based database application design and development are covered including control mechanisms, models, and views design and development. Server-side scripting and advanced web languages are introduced to facilitate students building dynamic web pages with graphics, sound, video, and animation while accessing customized databases via the Internet. Student teams build an integrated database application using high-level tools.

Prerequisites: ITFN 1201 and ITFN 1401 and (ITFN 1303 or CSCI 1301 or WBIT 1310)

ITFN 2512. Intern. Networking & Security (3)

An intermediate course in concepts and applications of computer networks including network topologies, network devices, standards and protocols. The course will emphasize WAN concepts with details of IP addressing, routing, subnet/supernet concepts, TCP/IP protocol suite, data security including security models, and access control.

Prerequisites: ITFN 1502 or ITFN 1501

ITFN 2512L. Intern Networking & Sec. Lab (1)

Laboratory accompanying ITFN 1512.

ITFN 3003. Professional Dev. and Ethics (3)

This course focuses on the knowledge and skills students need to succeed in their careers and function competently in the workplace.

Students will study theories and practices related to the social, ethical, and professional issues facing computing and computing professionals.

Students will apply professional codes of ethics to case studies by investigating current issues. Students will also begin construction of a digital portfolio representing skills acquired and projects completed.

Prerequisites: ITFN 2214

ITFN 3103. Human-Computer Interaction (3)

Human Computer Interaction addresses fundamentals, techniques and methodologies for development of software systems that minimize the barrier between human cognitive models and machine physical representations. Topics include interaction styles, interface devices, user documentation, and interface assessment. Technical writing techniques will be emphasized as students create and assess user manuals and systems documentation.

Prerequisites: ITFN 3112 (may be taken concurrently)

ITFN 3112. System Analysis and Design (3)

This course provides an in-depth study of established and evolving methods of information system design and implementation. As a project based class, it demonstrates by example and experience the process of building systems from needs analysis and definition through specifications and implementation. Traditional life cycle methodologies are contrasted with object oriented analysis and prototyping.

Prerequisites: (CSCI 1301 or ITFN 1303 or WBIT 1310) and ITFN 1101 or WBIT 1100

ITFN 3144. Informatics Project Management (3)

This course will introduce project management tools and techniques that can be applied to projects from various disciplines such as business intelligence, health informatics, bioinformatics, and many other science and humanities disciplines. Students will learn the importance and function of project management and apply the project process of initiating, planning, executing, controlling and closing the project. They will apply knowledge and skills to manage project scope, project time and work flow, project cost and budgets, project resources, project quality, project human resource requirements, project communications and project risk management.

Prerequisites: ITFN 2214

ITFN 3314. Testing and Quality Assurance (3)

A high-level class in testing and quality assurance emphasizing the planned development of software and the nature of test development and implementation. Topics include: test strategies, test planning, functionally testing, stability testing and debugging techniques.

Prerequisites: (CSCI 1302 or WBIT 2311 or ITFN 2313 or ITFN 2314) and ITFN 3112

ITFN 3316. SW Security, Testing, and QA (3)

This course covers software security analysis and quality assurance, emphasizing testing methodologies. Topics include: code analysis, static and dynamic analysis techniques, sandboxing, test strategies, test planning, functionality testing, stability testing, and debugging techniques.

Prerequisites: (CSCI 1302 or WBIT 2311 or ITFN 2313 or ITFN 2314) and (ITFN 3112 or CSCI 3320)

ITFN 3601. Operating Systems (3)

A conceptual and hands-on study of operating systems. Major areas discussed include operating system design and theory, applications and management issues, microcomputer and multi-user systems, including networks and mini/mainframe systems. Also covered are files, I/O, memory and process/processor management, networking, evaluation, tuning and application execution. Elements of operating system resource security including process, memory, file systems, and device peripherals, will be studied.

Prerequisites: (CSCI 1302 or WBIT 2311 or ITFN 2313 or ITFN 2314) and (MATH 1231 or MATH 1401 or MATH 2020 or MATH 2502 or WBIT 2300)

ITFN 4014. Internship Cooperative (3)

All students in the Bachelor of Information Technology program will complete this capstone course in cooperation with industry. Working under direction of business partners, students will develop meaningful projects, which integrate and apply skills aligned to program outcomes in a professional work environment. A minimum of 200 hours per semester is required and course deliverables will be aligned to the project.

Prerequisites: ITFN 3003 and ITFN 3144

ITFN 4154. Informatics Integration (3)

This course integrates the study of information and information technology across a milieu of academic disciplines and professional fields. Informatics supports development of knowledge through multidisciplinary application of information systems. Topics include: Information theory; knowledge management; legal and policy issues; responsibilities of informatics professionals; cultural, social, and ethical issues; and application of informatics to a variety of disciplines. Students will implement an informatics system applying current informatics applications and trends.

Prerequisites: ITFN 3103 and ITFN 3112 and ITFN 3144

ITFN 4433. Web Integration (3)

This course builds upon student fundamental database and web-design and development skills to expand into the server-side technologies, frameworks, and integration with external applications. Students will be exposed to IT problems, where collected data from different disciplines and formats must be modeled, stored, aggregated, retrieved and represented. This is a project oriented-course, and students will have opportunities to work in teams.

Prerequisites: ITFN 2214 and ITFN 3112 and ITFN 3103 and ITFN 3601

ITFN 4601. OS Security, Prog, & Admin (3)

This course covers computer operating systems, such as UNIX and Linux, systems programming, systems administration, and operating systems hardening.

Prerequisites: (CSCI 3305 and CSCI 3306) or (ITFN 3601 and ITFN 2512)

ITFN 4700. Applied Research-Inst. Asst. (3,6)

A supervised research and/or instructional experience in Information Technology.

ITFN 4800. Selected Topics in I.T. (3,6)

A special course designed to explore a specific area in IT. Prerequisite(s): Application to IT Department for permission and formal acceptance after application. Senior standing recommended.

ITFN 4801. Selected Topics in IT (3)

This course will explore special topics in Information Technology.

Prerequisites: (ITFN 3112 or MATH 3005) and (CSCI 1301 or CSCI 1371)

ITFN 4802. Selected Topics in IT (3)

This course will explore special topics in Information Technology.

Prerequisites: (ITFN 3112 or MATH 3005) and (CSCI 1301 or CSCI 1371)

ITFN 4803. Selected Topics in IT (3)

This course will explore special topics in Information Technology.

Prerequisites: (ITFN 3112 or MATH 3005) and (CSCI 1301 or CSCI 1371)

ITFN 4804. Selected Topics in IT (3)

This course will explore special topics in Information Technology.

Prerequisites: (ITFN 3112 or MATH 3005) and (CSCI 1301 or CSCI 1371)

ITFN 4805. Selected Topics in IT (3)

This course will explore special topics in Information Technology.

Prerequisites: (ITFN 3112 or MATH 3005) and (CSCI 1301 or CSCI 1371)