

# Information Technology (INFOTC)

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## **INFOTC 1000: Introduction to Information Technology**

This course introduces the field of Information Technology including foundation experiences and knowledge, the history of digital technologies, emphasis areas in the program, career opportunities, and ethical/social issues. Students participate in activities that introduce students to digital media, digital systems, and software engineering. Students learn to use distributed version control systems and how to work on collaborative teams.

**Credit Hours:** 3

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## **INFOTC 1001: Topics in Information Technology**

Topics may vary from semester to semester. May be repeated upon consent of department.

**Credit Hours:** 3

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## **INFOTC 1040: Introduction to Problem Solving and Programming**

An introduction to problem solving methods and programming concepts, providing experience in designing, developing, implementing, and testing programs. Cannot be taken for credit after CMP\_SC 1050.

**Credit Hours:** 3

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## **INFOTC 1600: Digital Systems**

This course provides a foundation of knowledge of digital systems including terminology, concepts, architecture, processes, tools, hardware, and software.

**Credit Hours:** 3

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## **INFOTC 1610: Introduction to Digital Media Design**

This project-based course is an introduction to the concepts and practices of audio design, graphic design, motion media design and basic video editing. Current technologies are employed to examine design fundamentals and applications of media design that apply to audio and video production and new media production.

**Credit Hours:** 3

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## **INFOTC 2001: Topics in Information Technology**

Topics may vary from semester to semester. May be repeated upon consent of department.

**Credit Hours:** 3

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## **INFOTC 2040: Programming Languages and Paradigms**

This course presents programming principles and their syntactical representation and implementation across languages including those that are compiled and interpreted. The course shows how to implement algorithms and data structures to solve problems while utilizing paradigms offered by the programming languages such as procedural, object-oriented, protocol-oriented, functional, and declarative. Language support for strong and weak typing and type safety are covered along with support for optional values. Provides experience in developing algorithms and determining their efficiency, designing application

architecture, and developing applications. Building and using libraries/application programming interfaces is covered. Git and GitHub are used for code versioning and collaboration. Integrated development environments (IDEs) are used for managing, building, debugging, and testing applications.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 with C- or higher; or prior experience with programming and consent of instructor

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## **INFOTC 2610: Digital Media Design I**

This project-based course addresses the fundamentals of design, digital media, and creative technologies. You will examine and utilize current technologies and standards within the digital media industry, including the software, hardware, and techniques needed to capture, store, manipulate, and deliver digital media. Through hands-on experience, you will achieve an understanding of pre-production, production, and post-production concepts, such as non-linear editing workflows, project management, narrative story structures, image composition and aesthetics, audio and video capture techniques, color theories and processing, computer components and editing hardware, intellectual property rights, addressing a target audience, industry trends, and more. The course also provides guidance on establishing and bolstering competencies in critical problem solving, teamwork, time management, networking, and conflict resolution.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 1610 or FILMS\_VS 1880 or DST\_VS 1880, or instructor content through course equivalencies

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## **INFOTC 2615: Color Processing and Design**

This project-based course is an intensive study of design and color processing for digital video. The course introduces advanced technologies and standards within the digital media industry, including the software, hardware, and techniques needed to capture, store, manipulate, and deliver digital media. Through an asynchronous experience, you will improve your understanding of color engineering concepts, such as post-production workflows, project management, color correcting and grading, color theories and science, color management systems, camera and sensor systems, computer components and editing hardware, display technologies, digital broadcasting requirements and signal constraints, peripherals, and more. The course also provides guidance on establishing and bolstering competencies in critical problem solving, teamwork, time management, networking, and conflict resolution. Graded on A-F basis only.

**Credit Hours:** 3

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## **INFOTC 2620: Computer Modeling and Animation I**

Introduction to the field of computer modeling and animation with an emphasis on tools. Learn programming methods for developing customized modeling and animation algorithms. Graded on A-F basis only.

**Credit Hours:** 3

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## **INFOTC 2630: Introduction to Game Theory and Design**

Students will develop foundational skills in game design and theory, and become proficient in the tools used to develop conceptual gaming environments. The student will develop skills to discuss, develop, and demonstrate the design process in cooperation with current game

theories and practices. The student will develop collaborative and cooperative design techniques mirroring that of the industry. Graded on A-F basis only.

**Credit Hours:** 3

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#### **INFOTC 2810: Fundamentals of Network Technology**

This course introduces the fundamentals of modern computer networking technologies, models, protocols, and network elements that connect users, applications, data, and devices through the Internet. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 with C- or higher

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#### **INFOTC 2830: Web Application Development I**

(same as CMP\_SC 2830). This course focuses on the development of web pages and web applications using Full Stack Development with the following strategies: HTML, CSS, JavaScript, jQuery, AJAX, PHP, and SQL. Topics such as cloud services, web servers, digital animations, images, audio and video, user interface design, and usability principles are also challenged.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040 or CMP\_SC 2050 with a C- or higher

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#### **INFOTC 2910: Cyber Security**

This course covers numerous platform-independent security topics including threats, problem ports and services, theory and practice of defense in security, intrusion detection, data security, securing remote access, user education and support, designing a secure network and security management. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 with C- or higher, and INFOTC 2810 with C- or higher

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#### **INFOTC 3001: Topics in Information Technology**

Topics may vary from semester to semester. May be repeated upon consent of department. Graded on A-F basis only.

**Credit Hours:** 3

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#### **INFOTC 3040: Python for Data Analytics and Machine Learning**

Python is one of the most popular programming languages in the world and is used in a number of industries such as Data Science, Machine Learning (ML) and Artificial Intelligence (AI), Web App development, Finance and Fintech, and others. This course provides students with experience developing software applications that utilize the advanced features of the Python 3 programming language. Students will learn, at a high level, about Data Science, Machine Learning, Text Analysis and Natural Language Processing (NLP) and how to utilize the tools available to develop their Python applications. There will be group and individual projects completed. Git and GitHub are used for code versioning and collaboration. A range of tools are used for managing, building, debugging, and testing applications. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040 with C- or better or instructor consent

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#### **INFOTC 3330: Object Oriented Programming**

(same as CMP\_SC 3330). This course focuses on object-oriented programming concepts such as: Abstraction, Polymorphism, Encapsulation, Inheritance, Interfaces, Abstract Classes, Files, Streams, and Object Serialization. Topics such as GUI and event-driven programming, APIs, and design patterns are also tackled. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040 or CMP\_SC 2050 with C- or higher

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#### **INFOTC 3380: Database Systems and Applications**

This course covers database management systems (DBMS) and the development of applications that utilize databases including relational/SQL and NoSQL types. Topics include the evolution of data storage and databases, data modeling, relational and NoSQL databases, SQL, document, graph and key-value storage and retrieval, application development using databases, database scaling, database trends, and popular database systems. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** C- or higher in CMP\_SC 2050 or INFOTC 2040; or experience developing applications and permission of the instructor

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#### **INFOTC 3530: UNIX Operating System**

(same as CMP\_SC 3530). This course is an introduction to UNIX and UNIX-like operating systems and interfaces, to include the file system, command shells, text editors, pipes and filters, input/output system, shell scripting and Regular Expressions. The course will also incorporate an aspect of programming in a UNIX environment, cloud computing, containers and an introduction to System Administration. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 with C-, or CMP\_SC 1050 with C-, or Instructor Consent

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#### **INFOTC 3600: User Experience Design I**

This course is a first in a series that focuses on User Experience (UX) Design for software applications. This course introduces the beginner to processes, techniques and methods of evaluation to design, model and evaluate application designs and user interfaces.

**Credit Hours:** 3

**Prerequisites:** May be restricted to Information Technology majors during early registration

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#### **INFOTC 3610: Digital Media Design II**

This research and project-based course builds upon the fundamentals of design, digital media, and creative technologies learned in INFOTC 2610. The course introduces advanced technologies and standards within the digital media industry, including the software, hardware, and techniques needed to capture, store, manipulate, and deliver digital media. You will utilize a spectrum of industry standard equipment and studios/facilities to achieve a deeper comprehension of digital media processes. Through hands-on experience, you will improve your understanding of pre-production, production, and post-production concepts, such as non-linear editing workflows, project management, audio and video recording devices, audio and video capture techniques, camera and sensor systems, color theories and processing, webcast and broadcast technologies, computer components and editing hardware, personal

branding, industry trends, and more. The course also provides guidance on establishing and bolstering competencies in critical problem solving, teamwork, time management, networking, and conflict resolution.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 2610. Instructor consent with approved equivalencies

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#### **INFOTC 3620: Computer Modeling and Animation II**

This course explores advanced 3D modeling and animation techniques within Blender. This is a project-based course, meaning that you will be completing projects to show that you have mastery of the learning objectives for each module. By the end of the class, you will be able to design and create 3D assets for game development, simulation scenarios, XR development, films, etc. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 2620 and C- or higher in INFOTC 1040, or instructor consent

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#### **INFOTC 3630: Introduction to Virtual Reality**

The course will provide students with a good understanding of the fundamentals of virtual reality and practical hands on VR experience development skills. It will introduce students to the software, hardware, and concepts involved with the current state of the art in virtual reality. This course will focus on using the recent consumer-grade equipment to design and construct virtual environment and experience.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 with C- or higher

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#### **INFOTC 3640: Motion Graphics and Visual Effects I**

This advanced media creation course is an introduction to the fundamentals of motion graphic design, 2-D animation, and visual effects design for content and new media creation. It is a project-based course that requires understanding of NLEs, experience in media creation and design, understanding of basic audio/video compression, and understanding of basic media design and concepts. Computer programs designed for graphic design, motion graphics, 2-D animation, and visual effects are integrated throughout the course.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 1610

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#### **INFOTC 3650: Project and Team Management**

This course is an intensive study of the development process, industry assessment techniques, communication practices, ethics, budget and schedule development. We also study Information Technology management approaches needed to successfully lead personnel, meet deadlines, and create large-scale, detail-oriented projects in today's IT production industry. This course explores industry from the ground up, from conceptualization of an IT business in an ever-changing environment, to management and deployment of products. This project-based collaborative course applies concepts directly to situational learning environments through the use of real-life examples from businesses in the industry. This course is divided into two major types of learning: academic exploration, and situational application. Key concepts and competencies are first explored during the academic portion of the class, and later applied through a multi-week business ownership simulation. It is important to note that this class is NOT software engineering oriented; this class does not focus on coding-

team management, SCRUM, Agile methodology, coding languages, or development of applications. This top-down course looks at all industries within the scope of Information Technology, from IT support to Digital Media Design. If you are interested in these other particular topics, it is recommended that you speak with your advisor, and consider INFOTC 4320 - Software Engineering. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 with C- or higher, or INFOTC 1610 with C- or higher, or instructor consent

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#### **INFOTC 3650W: Project and Team Management - Writing Intensive**

This course is an intensive study of the development process, industry assessment techniques, communication practices, ethics, budget and schedule development. We also study Information Technology management approaches needed to successfully lead personnel, meet deadlines, and create large-scale, detail-oriented projects in today's IT production industry. This course explores industry from the ground up, from conceptualization of an IT business in an ever-changing environment, to management and deployment of products. This project-based collaborative course applies concepts directly to situational learning environments through the use of real-life examples from businesses in the industry. This course is divided into two major types of learning: academic exploration, and situational application. Key concepts and competencies are first explored during the academic portion of the class, and later applied through a multi-week business ownership simulation.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 with C- or higher, or INFOTC 1610 with C- or higher, or with instructor consent

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#### **INFOTC 3660: Audio Engineering**

This course is an intensive study of the techniques and art behind the use of audio in today's media design environments. From the theater to television, from tablet and mobile device to computer, this course will focus on the four major sound design areas: sound in cinema, sound creation, sound manipulation, and environmental sound layering.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 1610 or FILMS\_VS 1880 or DST\_VS 1880

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#### **INFOTC 3810: Computer Network Security**

This course covers principles of networking configuration and security authentication, IP security, network management security, wireless security, and system security by studying attacks on computer systems, network, and the Web as well as detection and prevention. Work is completed in Unix/Linux environments and in Microsoft Windows environment. Students will need to setup a virtual private infrastructure to perform multiple tasks; additionally unlimited AWS cloud resources will be available for them. The course emphasizes "learning by doing" and has a 90% hands-on and 10% theory. Much of this information consists of skills and abilities that employers want and expect in the real world of IT - in a small to medium size organization. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** C- or better in INFOTC 2810 or C- or better in CMP\_SC 4850

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**INFOTC 3850: Computer System Administration**

This course is an introduction to Computer System Administration, we introduce the knowledge, skills, and procedures required for the stable and reliable deployment, management, and administration of an organization's computer systems. The course covers the planning, design, installation, maintenance, security, management tasks, tools, responsibilities, and ethics associated with being a Computer System Administrator for Unix/Linux server and MS Windows servers. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** C- or better in INFOTC 2040 or C- or better in CMP\_SC 2050, or instructor consent

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**INFOTC 3910: Advanced Cyber Security**

Students develop a deeper understanding of modern information and system protection technology and methods, including examining the various areas of network security including intrusion detection, reconnaissance, exploitation, and defense against cyber-attacks, as well as principles and techniques for digital forensics investigation. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2910 with C- or higher

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**INFOTC 3940: Internship in Information Technology**

Information Technology-related experience in business or industry jointly supervised by faculty and IT professionals. Students should apply one semester in advance for consent of the supervising professor. Graded on an S/U basis only.

**Credit Hour:** 1-6

**Prerequisites:** Instructor Consent

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**INFOTC 4001: Topics in Information Technology**

Topics may vary from semester to semester. May be repeated upon consent of department. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** May be restricted to Information Technology majors during early registration

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**INFOTC 4001W: Topics in Information Technology - Writing Intensive**

Topics may vary from semester to semester. May be repeated upon consent of department. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** May be restricted to Information Technology majors during early registration

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**INFOTC 4085: Independent Projects**

A student interested in doing an independent study project should first choose an area and instructor to work with. The student and instructor decide on a suitable Information Technology topic. The student writes up a detailed description of the project, including references, deadlines and deliverables. The instructor and student decide on details for completing the project during the semester for a grade.

**Credit Hours:** 3

**Prerequisites:** Consent of instructor

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**INFOTC 4200: Digital Production Systems**

This research and project-based course is an intensive study of the hardware and system admin management practices for digital media productions. The course introduces advanced technologies and standards within the digital media industry, including the software, hardware, and techniques needed to capture, store, manipulate, and deliver digital media. Through hands-on experience, you will improve your understanding of computer systems, hardware and components, display technologies, peripherals, input/output connectivity, operating systems, software and hardware integration, benchmark testing, system troubleshooting and maintenance, and more. The course provides content and simulated exercises aligned with the current version of the CompTIA A+ Exam (Core 220-1001 and 220-1002). The course also provides guidance on establishing and bolstering competencies in critical problem solving, teamwork, time management, networking, and conflict resolution. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 with C- or better, or INFOTC 2610 with C- or better

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**INFOTC 4320: Software Engineering**

Software Engineering covers the principles, processes, and professional practices used to design, develop, test, deploy, and manage software systems in a team-based, collaborative environment. A range of software engineering methodologies are covered with an emphasis on agile software development using incremental methods of managing the development activities.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040 or CMP\_SC 2050 with C- or higher, or permission of the instructor

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**INFOTC 4390: Database Administration**

This course is designed to give a firm foundation in Database Administrators' tasks. The primary goal is to give necessary knowledge and skills to setup, maintain and troubleshoot an Oracle database. This is an instructor-led course featuring lecture and hands-on exercises. Online demonstration and written practice sessions reinforce the concepts and skills introduced. The course defined objectives are designed to support preparation for the Oracle Certified Professional examination.

**Credit Hours:** 3

**Prerequisites:** CMP\_SC 4380

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**INFOTC 4400: C#.NET Development**

Learn how to develop and debug multi-threaded Windows desktop applications based on the object-oriented (OO), Model-View-Controller (MVC), and Model View ViewModel (MVVM) paradigms using C#, .NET, Windows Presentation Foundations (WPF), and Visual Studio. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040 or CMP\_SC 2050

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**INFOTC 4401: Python 1: Learn to Program in Python**

An introduction to the Python 3 programming language, covering various topics and paradigms. Cannot be taken for credit in the IT Program if you have completed INFOTC 1040. Graded on A-F basis only.



**Credit Hours:** 3

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**INFOTC 4405: iOS App Development I**

(same as CMP\_SC 4405). This is a first in a series of courses on developing iOS applications using Xcode, and the Swift programming language on the macOS platform.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 with C- or higher, or consent of instructor

**Recommended:** Prior experience programming in any programming language. The student should understand basic language concepts such as variables, data structures, control structures, and functions

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**INFOTC 4410: Android App Development I**

(cross-leveled with INFOTC 7410). This is the first in a series of courses on developing Android applications using Android Studio and the Java and Kotlin programming languages.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050, or consent of instructor

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**INFOTC 4420: Android App Development II**

(cross-leveled with INFOTC 7420). This is the second course in a series on developing Android applications using Android Studio and the Java and Kotlin programming languages. This course covers intermediate-level topics in application design, more complex UI implementations, and data persistence. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 4410, or consent of instructor

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**INFOTC 4425: iOS App Development II**

This is the second in a series of courses on developing iOS applications using Xcode and Swift programming language on the macOS platform. This course covers intermediate-level topics in application design, more complex UI implementations, and data persistence.

**Credit Hours:** 3

**Prerequisites:** INFOTC 4405 with C- or higher

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**INFOTC 4440: Android App Development III**

This is a third in a series of courses on developing Android applications using Android Studio and the Java and Kotlin programming languages. This course covers advanced topics in application architecture, application design, data persistence, and client-server architecture.

**Credit Hours:** 3

**Prerequisites:** INFOTC 4420 or permission of the instructor

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**INFOTC 4445: iOS App Development III**

This is the third in a series of courses on developing iOS applications using Xcode and Swift programming language on the macOS platform. This course covers advanced topics in application architecture, application design, complex UI designs, data persistence, and client-server architecture.

**Credit Hours:** 3

**Prerequisites:** INFOTC 4425

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**INFOTC 4500: Team-Based Mobile Device Application Development**

This is a multi-disciplinary, team-based course on developing applications for mobile devices. Teams will be comprised of students who are software developers and students who are designers. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2040; or CMP\_SC 2050; or permission of instructor with applicable experience

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**INFOTC 4600: User Experience Design II**

This course is the second in a series that focuses on User Experience (UX) Design for software applications. This course further develops the processes, techniques and methods of evaluation to design, model, and evaluate application designs and user interfaces.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1600

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**INFOTC 4610: Advanced Multimedia Design and Technology**

Students enrolled in INFOTC 4610 are immersed in upper-level study of media technology, software, and trends in the industry, with focus on advanced media design, motion media capture techniques, portfolio development, and industry standard technology and software. Topics include XR, Photogrammetry, Media Technology, Media Processing, and assembly (depending on semester). Students enrolled in the Writing Intensive portion of this class will also complete micro research papers during the duration of the course, focusing on technology, image processing, software, and other developments in the multi-media industry. These topics rotate per semester, given technology release dates. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IT Majors must complete INFOTC 1040 with C- or better or INFOTC 2610 with C- or better; other majors may seek instructor consent

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**INFOTC 4610W: Advanced Multimedia Design and Technology - Writing Intensive**

Students enrolled in INFOTC 4610 are immersed in upper-level study of media technology, software, and trends in the industry, with focus on advanced media design, motion media capture techniques, portfolio development, and industry standard technology and software. Topics include XR, Photogrammetry, Media Technology, Media Processing, and assembly (depending on semester). Students enrolled in the Writing Intensive portion of this class will also complete micro research papers during the duration of the course, focusing on technology, image processing, software, and other developments in the multi-media industry. These topics rotate per semester, given technology release dates. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IT Majors must complete INFOTC 1040 with C- or better or INFOTC 2610 with C- or better; other majors may seek instructor consent

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**INFOTC 4630: Game Development**

(same as CMP\_SC 4630). The course focuses on rapid game prototyping and development utilizing the Unity game engine and C#. You will learn the fundamentals of game programming and also a platform which is

actually used to make published games across multiple platforms (Mac, PC, web, iOS, Android etc). Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 3630 with C- or better, or INFOTC 2040 with C- or higher, or CMP\_SC 2050 with a C- or better

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#### **INFOTC 4640: Motion Graphics and Visual Effects II**

This advanced course builds on the concepts and practices developed in Motion Graphics and Visual Effects Design 1 for content and new media creation. Advanced 2D and 3D animation, motion tracking for compositing, visual effects design, and compositing concepts and practices are applied in this project-based course.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 3640

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#### **INFOTC 4650: Shader Programming**

The focus of this course is modern computer graphics algorithms and programming, with an emphasis on games, shader languages, (GLSL and Cg) and Graphical Processor Units (GPUs).

**Credit Hours:** 3

**Prerequisites:** CMP\_SC 2050, INFOTC 2620

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#### **INFOTC 4830: Web Application Development II**

(same as CMP\_SC 4830; cross-leveled with CMP\_SC 7830). This course will study science and engineering of the world-wide web, languages, protocols, services, and tools that enable the web. Topics such as virtual machines, model-view-controller, data interchange formats, data analytics, web services and APIs, templates, authentication, security, scalability, protocols, and version-control are also challenged. Emphasis will be placed on cloud services and technologies. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 2830 or CMP\_SC 2830 with a C- or higher

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#### **INFOTC 4910: Digital Forensics**

(same as CMP\_SC 4910; cross-leveled with INFOTC 7910). This course introduces an overview of basic Digital Forensics procedures and techniques to enable students to perform a digital investigation of physical storage media and volume analysis, including preservation, analysis and acquisition of artifacts that resides in hard disk and random access memory, for Linux and Windows systems. Work is completed in Unix/Linux environments and in Microsoft Windows environment. Students will need to setup a virtual private infrastructure to perform multiple tasks. The course emphasizes "learning by doing" and has a 90% hands-on and 10% theory. Much of this information consists of skills and abilities that employers want and expect in the real world of IT - in a small to medium size organization. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 3530 with a C- or better, or CMP\_SC 3530 with a C- or better

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#### **INFOTC 4970W: Senior Capstone Design - Writing Intensive**

This course is an opportunity for you to demonstrate that you have achieved the goals established by the Information Technology (IT) program. You will do this through a series of writing exercises, class activities, and a team-based project. You will demonstrate your ability

to synthesize various methods and skills, apply them to new, novel, complex, and integrated project requirements in real-world IT problems. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** C- or higher in INFOTC 4320, or C- or higher in INFOTC 3650. A C- in INFOTC 3650W (writing intensive) may be substituted for INFOTC 3650. Must have senior standing. Restricted to INFOTC majors

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#### **INFOTC 4990: Undergraduate Research in Information Technology**

Research topics as defined by instructor and student.

**Credit Hour:** 1-6

**Prerequisites:** Instructor's consent

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#### **INFOTC 4995: Undergraduate Research in Information Technology - Honors**

Research topics as defined by instructor and student.

**Credit Hour:** 1-6

**Prerequisites:** Instructor's consent

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#### **INFOTC 7001: Graduate Topics in Information Technology**

This course explores graduate level topics in Information Technology, focusing on the implementation of digital systems, application development, software engineering, cyber security, or media technology. Graded on A-F only only.

**Credit Hours:** 3

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#### **INFOTC 7100: Pedagogical Practices of Teaching Engineering Online**

An immersive study of pedagogical practices to teaching technology, and other core Engineering fields in an online format. The course explores and directly applies key concepts in learning objective creation, course organization, student engagement practices, rubric creation, facilitation of cooperative and collaborative work environments, teaching technologies and interactive media for learning, and direct student engagement. While involved with research and other direct challenge-based learning, the student will also be directly involved in the crafting and deployment of course materials, assessments, and student engagement activities for a currently active undergraduate course in the Information Technology Program. This affords the student both academic and practical, hands-on experience in both pedagogy development and learning materials. Students will be required to research topics, develop in-tandem learning materials, and engage with undergraduates seeking assistance with course content. This faculty led experience provides the student with the greatest immersive experience possible, while learning key concepts in higher education of engineering fields. Graded on A-F basis only.

**Credit Hours:** 3

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#### **INFOTC 7410: Android App Development I**

(cross-leveled with INFOTC 4410). You will be introduced to the tools, language, software architectures, and user interface requirements needed to develop applications for Android mobile devices. Topics will include, but are not limited to, installing Android development tools, creating user interfaces, build Android applications using the Java language. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 1040 or CMP\_SC 1050 or Instructor Consent

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**INFOTC 7420: Android App Development II**

(cross-leveled with INFOTC 4420). This is the second in a series of courses on developing Android applications using Android Studio and Java programming language on the Android platform. Students will be introduced to the tools, language, software architectures, and user interface requirements needed to develop applications for Android mobile devices. Graded on A-F only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 7410

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**INFOTC 7910: Digital Forensics**

(cross-leveled with INFOTC 4910). This course introduces an overview of basic Digital Forensics procedures and techniques to enable students to perform a digital investigation of physical storage media and volume analysis, including preservation, analysis and acquisition of artifacts that reside in hard disk and random access memory, for Linux and MS Windows systems. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOTC 3530 or CMP\_SC 3530 with C- or better, or instructor consent

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