Mizzou
University of Missouri

Information Technology (INFOTC)

INFOTC 1000: Introduction to Information Technology
Introduction to Information Technology introduces the field of Information Technology including foundation experiences and knowledge, the history of digital technologies, emphasis areas in the program, software engineering, computer networks and the internet, web development, current trends in technology, 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

INFOTC 1001: Topics in Information Technology
Topics may vary from semester to semester. May be repeated upon consent of department.

Credit Hours: 3

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.

Credit Hours: 3

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

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

INFOTC 1610H: Introduction to Digital Media Design - Honors
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. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: Honors eligibility is required. May be restricted to Information Technology majors during early registration

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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

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. This course 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

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

INFOTC 2620: Computer Modeling and Animation I
Students will investigate digital modeling and animation with an emphasis on principles. The skills and workflows that students learn within this class can be transferred to other software used within the industry with minor differences. This is a project-based course where students will be completing projects to show that they have mastery of the provided learning objectives. By the end of the class, students will be able to design and create unique digital models, environments, and animations. Graded on A-F basis only.

Credit Hours: 3

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

INFOTC 2650: Communication and Analytical Writing for Engineers
This course is an introductory study of communication practices, public speaking, group dynamics and group communication practices, as well as an introduction to the Institute of Electrical and Electronics Engineers (IEEE) writing style. The course prepares students for critical thinking and analytical processing or research topics, as well as developing strong reporting skills utilizing technical writing formats. This course does not replace the University requirement for successful completion of English 1000. Graded on A-F basis only.

Credit Hours: 3

INFOTC 2650W: Communication and Analytical Writing for Engineers - Writing Intensive
This course is an introductory study of communication practices, public speaking, group dynamics and group communication practices, as well as an introduction to the Institute of Electrical and Electronics Engineers (IEEE) writing style. The course prepares students for critical thinking and analytical processing or research topics, as well as developing strong reporting skills utilizing technical writing formats. This course does not replace the University requirement for successful completion of English 1000. Graded on A-F basis only.

Credit Hours: 3

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

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 methodologies and tools. Topics such as current events, 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

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

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

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

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, CRUD operations, database management, 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. This course also introduces students to containerized development using Docker. 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 as well as an overall view of Operating Systems and their function. 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

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

INFOTC 3650: Leadership and Ethics in Information Technology
This course is an intensive study of leadership frameworks, management practices, technical project management skills, and the application of ethical decision making in a technology-saturated world. This project-based, highly detail-oriented 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 (approximately 10 weeks), and later applied through a multi-week business ethics simulation. This class is NOT software engineering oriented; it 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 through a lens of management and ethics. 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: Leadership and Ethics in Information Technology - Writing Intensive
This course is an intensive study of leadership frameworks, management practices, technical project management skills, and the application of ethical decision making in a technology-saturated world. This project-based, highly detail-oriented 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 (approximately 10 weeks), and later applied through a multi-week business ethics simulation. This class is NOT software engineering oriented; it 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 through a lens of management and ethics. Graded on A-F basis only.

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

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

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

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

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

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 to bolster 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, development tools, 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. Students are organized into scrum teams and complete a series of projects together throughout the semester. Students also learn to develop and deploy software systems using Docker, using Git/Github as the version control system.

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

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

INFOTC 4401: Python 1: Learn to Program in Python
An introduction to the Python 3 programming language, covering various topics and paradigms. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: This course is restricted to students not in the BS in Information Technology program

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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

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

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 consent of instructor

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

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 3600

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

INFOTC 4650: Shader Programing
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

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, CMP_SC 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 intensive culmination and evaluation of competencies learned and experienced in the Information Technology Program at the University of Missouri. This includes but is not limited to programming, software engineering, networking, cybersecurity, design principles, modeling and animation, media design, ethics, and XR environments. This semester-long project-based course assesses student teams and their ability to produce a portfolio of work demonstrating their level of knowledge of related fields, ability to work collaboratively, to design and implement a project, to communication and provide presentation, and demonstrate professionalism, represented by the creation of a final project evaluated by the faculty. The course is divided into three phases: conceptualization, design and discovery, and implementation. Students choose or are otherwise assigned to student teams and will work with those individuals throughout the semester to complete the work. 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

INFOTC 4995: Undergraduate Research in Information Technology - Honors
Research topics as defined by instructor and student.

Credit Hour: 1-6
Prerequisites: Instructor's consent

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

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

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

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

INFOTC 7910: Digital Forensics
(same as CMP_SC 7910; cross-leveled with INFOTC 4910, CMP_SC 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