

## ACSG 405

**Project Management for Information Technology**

3 Credit Hours

In this course, students develop an understanding of project management and how it improves the success of information technology projects. Project management terms and techniques such as the triple constraint of project management, knowledge areas, process groups and the life cycle are illustrated. The course provides coverage of tools and techniques of project management such as selection methods, work breakdown structures, network diagrams, critical path analysis, critical chain scheduling, cost estimates and earned value management. Motivation theory and team building as part of the information systems organization structure is considered. A small project described from some case examples and solved using Microsoft Project integrates topics from the course.

## ACSG 425

**Data Communications and Wireless Networking**

3 Credit Hours

This course provides an overview for the fundamentals of data communications for wired and wireless networking. Topics include analog and digital transmission, transmission media, encoding techniques, multiplexing, flow control, error control, packet switching, circuit switching, wireless LANs, cellular wireless networking and emerging wireless technologies.

## ACSG 430

**Mobile Applications**

3 Credit Hours

Currently, there is rapid growth in the number of mobile devices being used with correspondingly high demand for good apps for phones and tablets on all platforms. In this course students will research the characteristics of a good app, then learn how to create one. As a culminating project, students will plan, design and build a fully functional app.

## ACSG 435

**Cloud Computing**

3 Credit Hours

This course provides an overview for the fundamentals of cloud computing. It describes the delivery model of how IT resources including applications, computing and storage are provided as services, releasing consumers from owning the physical resources and paying for unused services. It describes the concepts of Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). Topics include cloud computing architecture, design, use cases, deployment and management.

## ACSG 440

**Networking Fundamentals**

3 Credit Hours

This course introduces students to the computer networking, local area network configuration and management, network hardware, network topologies and technologies, network media, network protocol, IP addressing, and Wide Area Network. \*This is a prerequisite course for the Graduate program, which may be waived if the student has sufficient experience or has completed a course in programming. As

such, it does not count toward the 36-credit hour program requirement.

## ACSG 441

**Relational Database Theory**

3 Credit Hours

This course introduces the student to the theory and implementation of relational databases. Topics include the relational model, foreign keys, joins, basic SQL including joins and group aggregates, and normalization. \*This is a prerequisite course for the Graduate program, which may be waived if the student has sufficient experience or has completed a course in programming. As such, it does not count toward the 36-credit hour program requirement.

## ACSG 442

**Introduction to Computer Programming**

3 Credit Hours

This course introduces the students to computer programming. Students create programs that use the basic elements of programming: control structures, logical expressions, variables, arrays and file input and output. Students are evaluated on their ability to read and write programs. The course will use Python 3, a contemporary programming language that is used in data science, web development, artificial intelligence, and business applications. \*This is a prerequisite course for the Graduate program, which may be waived if the student has sufficient experience or has completed a course in programming. As such, it does not count toward the 36-credit hour program requirement.

## ACSG 450

**Digital Forensics**

3 Credit Hours

This course introduces students to the techniques and tools of computer forensics investigations. Students will receive step-by-step explanations of how to use the most popular forensic tools. Topics include coverage of the latest technology, including PDAs, cell phones and thumb drives. Many hands-on activities are included which allow students to practice skills as they are learned.

## ACSG 452

**Advanced Database Topics**

3 Credit Hours

As a second course in database theory and design, it begins with a quick review of database fundamentals, including ER modeling techniques, normalization, SQL and implementation issues. Course topics include data storage techniques, indexing, query processing and optimization, transaction processing, concurrency control, administration, security, data mining, data warehousing, distributed databases, internet databases and XML.

## ACSG 455

**Open Source Software**

3 Credit Hours

This course covers the installation, configuration and basic operation of the LAMP (Linux-Apache-MySQL-PHP) environment and other open source software. LAMP has become a common environment in business. Instructional

modules in this course serve as a necessary introduction to the use of the Linux operating system and provide basic functional familiarity with software used in other courses for database, web service and scripting.

ACSG 465

**Usability and Design**

3 Credit Hours

In this course, students learn the principles of user-centered design and how they can be effectively applied to building usable websites and intranets. Topics covered are user profiling, data gathering, scenarios and transitioning to final design.

ACSG 515

**Next-Generation Software Architectures**

3 Credit Hours

This course explores new paradigms in software engineering and computer systems architecture, including approaches to storing data across complex mobile networks. Students will study modern approaches to software architecture that build on powerful next-generation hardware and software technology.

ACSG 520

**TCP/IP Architecture and Protocols**

3 Credit Hours

This course provides a solid foundation for understanding the communication process of the Internet. Topics include TCP/IP protocol suite, TCP/IP layered architecture, classful and classless addressing, IPv6, ARP, RARP, UDP, TCP, SCTP, unicast and multicast routing protocols, TELNET, FTP, TFTP, HTTP, SMTP, POP, IMAP, WAN technologies, mobile IP, multimedia over IP, compression, congestion control, flow control, and security issues.

ACSG 532

**Fund Big Data Analytics**

3 Credit Hours

Big Data Analytics is about harnessing the power of data for new insights. This course covers the breadth of activities, methods, and tools that data scientists use. The content focuses on concepts, principles, and practical applications that are applicable to any industry and technology environment. The learning is supported and explained with examples and coding exercises.

ACSG 535

**Software Requirements**

3 Credit Hours

This course focuses on the software requirement gathering, software requirement specification, functional and non-functional requirements, use case scenario development, and UML, and software verification and validations.

ACSG 540

**Web Development**

3 Credit Hours

This course will enable students to create dynamic web applications using both client-side and server-side scripting technologies. Client-side technologies are necessary for validation of form data and interaction with visitors to the

website. Server-side scripting enables the website to interact with other computer application systems such as email and databases. Topics include HTML, Cascading Style Sheets, PHP and database access through the web.

ACSG 542

**Full-Stack Development**

3 Credit Hours

Front-end, back-end and everything in-between, this course will broaden students' understanding of programming and will challenge their knowledge of computer science. This is a resume-worthy course that gives students a taste of a programming career that encompasses every level. This course will utilize the latest web programming technologies, including Node.js, MongoDB and Angular. Students should have some knowledge of programming and some knowledge of HTML before taking this course.

ACSG 545

**Software Engineering**

3 Credit Hours

This course addresses the foundations, methodologies, and tools for developing high-quality large-scale software systems, with an emphasis on the technical issues of software development. Students in this course will work in groups through all stages of the design process (requirements, specification, design, code, and test) as they design and implement large-scale projects.

ACSG 547

**Software Design**

3 Credit Hours

This course focuses on transforming the software requirements into a design form, which helps the programmer in software implementation.

ACSG 549

**Software Processes**

3 Credit Hours

This course focuses on the industry standards for software process such as ISO 12207 and SEI's CMMI models.

ACSG 555

**Data Mining and Warehousing**

3 Credit Hours

This course focuses on the design and implementation of data mining systems and introduces the student to all aspects of the data mining process, from preprocessing to information retrieval. Current algorithms and OLAP technologies are covered. Applications in a variety of settings and industries are introduced and discussed.

ACSG 556

**Data Visualization**

3 Credit Hours

This hands-on course is an introduction to the principles and techniques of data visualization, and will include the identification of patterns, trends and differences from data sets across categories, space, and time. Students will learn appropriate visual representation methods and techniques that increase an audience's understanding of complex data and

models and enhance human comprehension, communication, and decision-making. Graphical methods for specialized data types will be presented.

ACSG 561

### **Systems Analysis and Design**

3 Credit Hours

The course material encompasses the concepts, tools and techniques required to analyze and design business information systems. It includes structured development approaches and the system development life cycle, as well as rapid application development through alternative approaches. Emphasis will be given to the role of information systems in organizations and how they relate to organizational objectives and structure. Students will be introduced to modeling tools such as data flow diagrams, entity-relationship diagrams, data dictionaries, decision tables, decision trees, structured English, use cases and structure charts.

ACSG 570

### **Computer Systems Security**

3 Credit Hours

This course is concerned with the planning, deployment and security of Web services. Topics include hardware and software selection, fundamentals of secure configuration and maintenance, site organization, intrusion detection, hardening of systems, hacking, the nature of malicious attacks, resources for improving computer security, backup procedures, and documentation techniques.

ACSG 572

### **Modern Operating Systems and Security**

3 Credit Hours

This course explains the security implementation for various operating systems. It focuses on security risk identification, security configuration and implementation, and tools availability for Windows operating systems and applications.

ACSG 575

### **Information Ethics**

3 Credit Hours

An introduction to ethical theories and the tools of ethical analysis is followed by the study of ethics issues in privacy, security and intellectual property. Topics include database and Internet ethics, electronic surveillance, plagiarism and electronic voting. Readings will be drawn from classical computer ethics literature, journals, news media and contemporary books that address these topics.

ACSG 578

### **Network Security**

3 Credit Hours

This course discusses various technical issues involved in security threats and protection of computer networks.

ACSG 585

### **Network Administration**

3 Credit Hours

This course explains how to manage, install, and configure IP, IP Routing, DHCP, Access control, and DNS of wire and wireless networks.

ACSG 591

### **Special Topics**

3 Credit Hours

Special topics are offerings developed to examine emerging issues of significance in the field. This course may be proposed and organized from within the University or by outside-recognized professionals who wish to contribute to the program and its studies.

ACSG 592

### **Independent Study**

1 to 4 Credit Hours

Independent study is an intensive individualized study related to a topic in the field. Study goals are outlined, reviewed and agreed upon by the student and faculty member. A written contract is developed. A final report or project is mandatory from the student to the faculty member. Pass/Fail grade option only.

ACSG 593

### **Directed Study**

1 to 4 Credit Hours

Directed study is a course offered by a non-traditional method or a non-traditional educational institution that does not offer university credit or employer related training. The student is responsible for putting sufficient documentation on file with the advisor to receive credit. Pass/Fail grade option only.

ACSG 594

### **Internship**

1 to 4 Credit Hours

Students will work for a semester in an agreed upon career position. The employer will be expected to put a letter on file with the program advisor documenting the proposed professional contribution the student is making to the organization. The employer must supply an evaluation at the end of the internship period. The student must apply for the academic credit at the time the internship takes place. See Division Director for internship guidelines. Pass/Fail grade option only.

ACSG 599

### **Graduate Capstone Course**

1 to 4 Credit Hours

*Pre/Corequisite:* P (RQ) Admission to the program

This course covers the formal development of a thesis, project, directed study, or internship. Before registering, the student must submit a proposal for an intensive individualized study related to a topic in the field. Study goals are outlined, reviewed and agreed upon by the student and faculty. The student must submit and present a final thesis or culmination report for final evaluation and approval by the program.