INFORMATION TECHNOLOGY PROGRAM

Mission Statement

The University Information Technology Programs prepare forward-thinking, technically skilled, and ethically grounded professionals to design, secure, and manage modern technology systems through applied learning, hands-on experience, and real-world problem solving.

Our Vision & Identity

We believe technology education should be immersive, relevant, and connected to practice. Our programs integrate academic rigor with over a thousand of hands-on lab experiences, industry-aligned coursework, and applied capstone projects that mirror real workplace challenges.

We are Practice-Driven, Student-Focused, and Career-Connected. Students learn from faculty who are both advanced scholars and active technology executives, engage in experiential labs across multiple IT domains, and have opportunities to compete nationally as members of our cybersecurity competition team while building professional skills that translate directly to the modern workforce.

Undergraduate Offerings

Major

- Information Technology, Bachelor of Science (https://catalog.tulane.edu/professional-advancement/information-technology/information-technology-major/)

Minor

- Information Technology, Minor (https://catalog.tulane.edu/professional-advancement/information-technology/information-technology-minor/)

Bachelor of Interdisciplinary Studies Concentrations

- Cybersecurity Concentration (https://catalog.tulane.edu/professional-advancement/humanities-social-sciences/interdisciplinary-studies-major/#requirementstext)
- Information Technology Concentration (https://catalog.tulane.edu/professional-advancement/humanities-social-sciences/interdisciplinary-studies-major/#requirementstext)

Graduate Offerings

Graduate Program

- Cyber Technology, Master of Science (https://catalog.tulane.edu/professional-advancement/information-technology/cyber-technology-ms/)

Graduate Certificates

- Cyber Technology Fundamentals, Graduate Certificate (https://catalog.tulane.edu/professional-advancement/information-technology/cyber-technology-fundamentals-cer/)
- Cybersecurity, Graduate Certificate (https://catalog.tulane.edu/professional-advancement/information-technology/cybersecurity-cer/)
- Data and Artificial Intelligence, Graduate Certificate (https://catalog.tulane.edu/professional-advancement/information-technology/data-and-artificial-intelligence-cer/)
- Technology Leadership, Graduate Certificate (https://catalog.tulane.edu/professional-advancement/information-technology/tech-leadership-cer/)

Courses

This page lists the Information Technology courses currently offered through Tulane SoPA, including brief course descriptions and related notes. As you will find in the Schedule of Classes, many Information Technology courses are designed to support preparation for industry-recognized professional certification exams (such as AWS, CompTIA, EC-Council CEH, etc.). When applicable, the SoPA Computer Course Fee provides discounted access to partner training materials and may make students eligible for reduced-cost certification exam vouchers through the university.

Cybersecurity Management (CSMT)

CSMT 7050 Leadership for Cybersecurity Professionals (3)
This course is designed to provide the advanced knowledge and skills for management of cybersecurity throughout the enterprise. The course examines internal and external security threats against a network, documenting and advocating for cybersecurity spending, managing resources (including vendors) and development of a security governance plan to establish standards and a framework to protect an organization's information.

CSMT 7300 Data and Database Security (3)
This course provides in-depth study of database architecture (including Cloud based data structures and applications) and database management systems from the perspective of securing data. This course covers principles and methodologies of database design from security, and techniques for database application auditing, aggregating, reporting, analysis and response from a cybersecurity management perspective. Best practices in securing data at rest, data in transit and data in use will be reviewed in depth against the context of recent noteworthy breaches. (Virtual Lab)

CSMT 7500 Information Technology Security Auditing and Monitoring (3)
This course will review tools and methods to audit and monitor a network, including auditing, aggregating, reporting, analysis and response from a cybersecurity management perspective. This will include in-depth coverage of System event, intrusion detection, intrusion prevention, firewalls, packet monitoring and endpoint secuirty and detection. (Virtual Lab)

CSMT 7700 Cyber Network and Telecom Security (3)
This course provides in-depth technical knowledge on securing enterprise networks and telcommunications. The course examines defense and defensible architecture, along with best practice implementations of security tools and solutions, and is designed to equip the student with methods and constructs used to test network security. By the end of the course, students will be able to design a basic network from a security perspective to include tools and technologies to best secure an organization's information.

CSMT 7750 Wireless, Mobile and Cloud Security (3)
This course reviews architecture, vulnerabilities and security methods for Wireless, Mobile and Cloud Computing technologies in the enterprise. Included topics will be reviewing these network constructs as well as vulnerabilities, and attack vectors. Also covered are best practices for implementing and securing IEEE 802.11 wireless networks, wireless access and BYOD, wireless security protocols, mobile IP communications, and cloud computing categories and services. This course also looks at current and emerging cloud services and cloud-based applications, including the "Internet of Things".

CSMT 7800 Cyber Law and Policy (3)
In this course, students study existing and evolving laws, agreements, legal decisions, regulation and compliance pertaining to cybersecurity and enterprise IT. Students will also explore ethical considerations of cybersecurity practices, including social networking and privacy in the context of enterprise cybersecurity management.

CSMT 7870 Cyber Incident Reponses and Forensics (3)
This course takes a 360 degree study of cyber incident response and investigation from the standpoint of a cybersecurity manager. This includes securing a cyber-incident scene, preserving digital evidence, establishing and maintaining chain of custody, safeguarding evidence, forensic analysis and tools as well as examination and review of evidence. As part of this review, students will consider decision matrices for notifying and working with government and law enforcement agencies. (VIrtual Lab)

CSMT 7900 Security and Cyber Threats for Managers (3)
This course provides advanced information on current threats to IT systems including an array of current and evolving exploitation methods and vulberabilities. Through research as well as lecture, students examine an array of attack types and goals of attackers with an analysis of the anatomy of an attack including motivation, purpose, types, and phases. This course also considers emergent technologies and technical uses (such as Blockchain, Internet of Things, and Quantam Computing) from the standpoint of threat and security.

CSMT 7920 Software and Website Application Security (3)
The goal of this course is to provide cybersecurity managers and practitioners with an in-depth review of the technologies, models, best implementation practices and known software and web application vulnerabilities. The course reviews activities and processes pertaining to the planning, programming, and management of software (and systems that manage software) including ways to secure applications through design and control interfaces. This includes in-depth reviews of application architecture, trust models, key management, web protocols, and digital certificates. This course also delves into means and measures to assess effectiveness of application security.

CSMT 7950 Cryptography (3)
The goal of this course is to provide Cybersecurity Management candidates with an in-depth understanding of ciphers, cryptology, and encryption and their use in safeguarding information and systems in the enterprise. The course covers the standard uses of encryption including access control, authentication, data application security, and virtual private networking and examines technical direction and trends in regards to the future of cryptology. The course will also review legal decisions and implications of encryption in the debate on privacy/civil liberties versus business and secuirty/safety goals.

CSMT 7990 Enterprise Cybersecurity Management Capstone (3)
In this Capstone course, students will apply cybersecurity management concepts, best practices, technical knowledge and principles as learned throughout the Program from the perspective of an organizational CSO/CISO. Through Case Study, students will display mastery of these through the creation of deliverables necessary to manage an effective enterprise cybersecurity program. This will include review/documentation of an IT organization's security posture, and creation of a Risk Management structure, Security Policy/Operational Framework, and Budget. Finally, each student will produce a professional-grade White Paper on a Cybersecurity/Cybersecurity Management topic to be assessed by the MPS in Cybersecurity Management Assessment Board.

Prerequisite(s): CSMT 7050, 7900, 7700, 7800, 7500, 7950, 7300* and CPST 7150.
* May be taken concurrently.
A minimum grade of B- is required in CSMT 7050, CSMT 7900, CSMT 7700, CSMT 7800, CSMT 7500, CSMT 7950, CSMT 7300 and CPST 7150.

Information Technology (CPST)

CPST 1000 Introduction To Office Applications (3)
This course introduces students to the microcomputer and some popular micro applications. Special attention is given to essential concepts, word processing, spreadsheets, and database management. The course also provides a preface to operating environments such as Windows. Includes hands-on laboratory sessions; currently, Microsoft Office tools are used for this course. Note: This course does not count toward the requirements for a major or minor in Information Technology but can be used to satisfy a science distribution requirement for the School of Professional Advancement.

CPST 1070 Discrete Math for Information Technology (3)
This course provides an introduction to discrete mathematical structures and themes with an emphasis on applications to computing and information technology. It develops analytical skills used to solve problems concerning the speed and logical structure of computer software, computer hardware, and computer networks. Note: This course does not count toward the requirements for a major or minor in Information Technology but can be used to satisfy one of the mathematics requirements for the School of Professional Advancement.

CPST 1200 Fundamentals of Informational Systems and Technology (3)
This survey course provides a broad foundation in the concepts of modern information systems, information processing, and information technologies. It provides an overview of the key technology components that make up modern information systems and the processes and issues involved in the development of information systems.

CPST 1400 Internet Collaboration (3)
This course acquaints the students with the Internet, its uses and history, and a wide variety of tools and applications for effectively accessing information. Students will have the opportunity to learn classic text-based Internet applications, as well as graphical and multimedia capabilities of the World Wide Web. Coverage of basic technologies (e.g., hardware, protocols, authoring software) is included. Note: This course does not count toward the requirements for a major or minor in Information Technology but can be used to satisfy a science distribution requirement for the School of Professional Advancement.

CPST 2200 Application Development Fundamentals (3)
This course presents a structured approach to problem analysis, algorithm design and solution implementation in a high level computer language. Students will learn how to analyze problems and represent solutions in pseudo-code. Students will study the basic concepts of programming, internal representation of data, simple data types, searching and sorting techniques.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 2300 Database Fundamentals (3)
Introduction to database management systems with an emphasis on relational database concepts, database processing, data modeling, database design, development and implementation. Includes implementation of current DBMS tools and SQL.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 2400 Webpage Design and Development (3)
This course goes beyond mere use of the Internet into the tools and techniques needed to successfully publish digital media. Through lectures, class discussions, and hands-on lab work, you will become acquainted with the hardware, software (on workstations, on servers, and on the Internet), and tool management techniques needed to create and maintain web documents and sites. The course includes coverage of HTML and CSS.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 2500 Information Technology Infrastructure Fundamentals (3)
This course covers the basic principles and applications of technology architecture including hardware, software, virtualization of servers, storage, and networking. Utility servers/appliances, server environments, and Cloud architecture will be presented in the course. Software to be studied includes Operating Systems, virtualization software, application software, and hardware appliance management software. Key concepts such as security, redundancy, reliability, maintainability, and availability will be discussed. Students will be provided with an overview of technology architectures, data systems, and the applications that manage system resources.

CPST 2600 Networking Fundamentals (3)
This course covers topics related to wired/wireless connectivity and data exchange between digital devices. In addition to learning common networking terminology, students will examine and perform hands-on exercises using existing and emerging networking standards and architectures. Also covered are network operating systems, topologies, structed cabling, communications protocols, LAN-to-LAN interconnectivity and WAN fundamentals. This course is intended to provide a solid foundation for further study of IT networking connectivity principles.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 2700 Fundamentals of Cybersecurity (3)
This course provides the student with an overview of the field of cybersecurity and assurance, and a foundation for understanding the key issues associated with protecting information assets, and designing a consistent, robust cybersecurity posture. Students will be exposed to the spectrum of cybersecurity activities, devices, methods, methodologies, and procedures. Coverage will include inspection and prevention, detection, and response to cybersecurity threats, and an overview of the cybersecurity planning and staffing functions.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 2910 Documentation and Technical Writing (3)
This course provides a complete process for planning, creating, and editing technical content, for both internal and external audiences including assessing the needs of users, selecting appropriate formats, making effective use of media, and selecting the best content organization and delivery platform Students demonstrate proficiency in written content creation and presentation skills by producing different technical writing products, including formal research reports and workplace writing (e.g., technical reports, manuals, explanations of how to understand or use a product or service, proposals, etc.). Students will be exposed to software applications to architect, organize, and publish technical content and media. This course will also address the job duties of technical writers/editors. Topics include establishing positive working relationships with writers, management, and subject matter experts.

Prerequisite(s): ENGL 1010 and CPST 3050.
A minimum grade of D- is required in ENGL 1010 and CPST 3050.

CPST 2940 Information Tech Trans Credit (3)
Course may be repeated up to unlimited credit hours.

Maximum Hours: 99

CPST 3030 Artificial Intelligence and Modern Society (3)
In this course, we will explore the profound impact of Artificial Intelligence (AI) on modern society. As AI technologies become increasingly embedded in every aspect of our daily lives, from smart assistants in our homes to complex decision-making systems in our workplaces, it is crucial to understand not just the technological mechanisms that drive AI but also the societal, ethical, and economic implications of these advancements.

CPST 3050 Technology and Ethics (3)
This course examines the ethical and social aspects of information technology with emphasis on computing. Pertinent issues include acquisition, access, stewardship, liability, freedom, privacy, control and security. Note: This course can be used to satisfy a School of Professional Advancement? Humanities Distribution Requirement.

Prerequisite(s): ENGL 1010 and CPST 1200.
A minimum grade of D- is required in ENGL 1010 and CPST 1200.

CPST 3100 Ethics and Technology thru Science Fiction (3)
The primary goal of this course is to introduce the theories, concepts, and vocabulary of philosophical ethics and to apply these notions to contemporary moral issues of technology use including human enhancement, artificial environments, the treatment of non-human animals, personal identity, and artificial intelligence. The course investigates ethical topics through the prism of classic science fiction stories that raise ethical questions and engender discussion of modern philosophical views of human values, ideals, and morality as they relate to applied technology use. The course further provides a survey of current ethical dilemmas and problems that arise in technology use.

Prerequisite(s): ENGL 1010 and CPST 1200.
A minimum grade of D- is required in ENGL 1010 and CPST 1200.

CPST 3200 Automation and Bot Development (3)
Robotic Process Automation (RPA) is a technology that is transforming the way modern businesses operate. The same way the advent of computers shifted people from using paper to using computers, the arrival of RPA is bringing another shift in the workplace, causing people to perform their jobs using information instead of computers. Over time, mundane and repetitive computer software tasks that humans perform will be replaced by software "bots". As RPA shifts work from computers to information, one of the new jobs that will emerge across most industries will be that of a "bot developer". Learning this technology positions students for job opportunities in this field. A bot developer must be able to design and create software robots by translating work people perform on computers into automated "scripts", or sets of instructions, that are then programmed into robots.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 3220 Object-Oriented Programming with Java (3)
This course presents the fundamentals of the JAVA programming language. Topics include JAVA syntax, data types, design of classes, class libraries, data structures, exception handling, threads, input and output, and applet programming.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 3230 Application Development In C++ (3)
This course presents the fundamentals of the C++ programming language. It covers development of computer-based solutions in C++, using object-oriented and event-driven techniques, and accessing databases with open database connectivity.

Prerequisite(s): CPST 2200 and 2300.
A minimum grade of D- is required in CPST 2200 and CPST 2300.

CPST 3240 Python Game Development (3)
This course provides introduction to both fundamental programming concepts and the Python programming language. Students will be exposed to hands-on exercises including creating a 2D game using Python and Pygame.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 3250 User Interface/User Experience Design (3)
This course examines topics related to developing and evaluating user interfaces for interactive computer systems. Topics covered include usability goals and principles, user interface design principles, managing design processes, prototyping and construction, interface metaphors, interaction styles, interaction devices, software tools, user interface builders, evaluation paradigms and techniques, usability testing, user manuals, tutorials, computer-supported collaborative work.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 3260 Virtualization and Cloud (3)
This course focuses on the skills and knowledge necessary for provisioning and managing virtualized services in cloud Infrastructure as a Services (IaaS) environments including: virtual networks, virtual machines, containers, web and mobile apps, and storage; planning and managing cloud resources, and configuring Azure AD integration with on-premises Active Directory domain.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 3270 Cloud Foundations (3)
This course provides a detailed overview of cloud concepts, services, security, architecture, pricing, and support. Students will receive an overview of the fundamental concepts of cloud computing independent of specific technical roles. Students will be exposed to cloud infrastructure and will deploy basic cloud services.

Prerequisite(s): CPST 4610.
A minimum grade of D- is required in CPST 4610.

CPST 3280 Cloud Architecture (3)
This course covers the concepts of building IT infrastructure on a public cloud service provider's infrastructure. The course is designed to teach students how to optimize the use of the cloud by understanding a variety of service solutions and how these services fit into cloud-based solutions. Because cloud-based architectural solutions, and related costs, can differ depending on environment, type of applications, and size of business, this course emphasizes best practices for cloud computing architecture, and it recommends various design patterns to help the student think through the process of architecting optimal IT solutions.

Prerequisite(s): CPST 3270.
A minimum grade of D- is required in CPST 3270.

CPST 3290 Linux Administration and Hybrid Cloud (3)
This course teaches students about the nature, benefits and drawbacks of using a Hybrid Cloud solution and how to install, administrate, and maintain a secure Linux server to manage hybrid cloud. The course will introduce students to Linux utilities while applying this knowledge towards more advanced hybrid cloud principles. Students will learn to implement a hybrid cloud computing environment using industry standard cloud service provider tools. Students will learn how to install, configure, use, and maintain a hybrid cloud environment. Students will be exposed to the myriad of decisions and actions required when implementing a hybrid cloud solution. This course covers core hybrid cloud services: identity, storage, image, networking, compute, memory, and management dashboards.

Prerequisite(s): CPST 3260.
A minimum grade of D- is required in CPST 3260.

CPST 3300 Mobile Application Development (3)
This course focus on developing hybrid mobile applications using the web technologies (HTML5, CSS and JavaScript). This course makes use of the Ionic framework that is built with mobile-optimized HTML5 and CSS based components and Angular (JavaScript framework). Students will learn about UI development with Ionic and then using Apache Cordova's modules to access the native mobile platform's capabilities from JavaScript. Students will finish an in-class project by following along with the Instructor step by step throughout a complete mobile app project in class, then build their individual mobile app (as homework) by finishing their individual project supervised under the instructor. At the end of this course students will be able to (1) Build mobile applications targeting multiple platforms with a single codebase, (2) Use various features of the Ionic framework to build hybrid mobile applications, (3) Leverage their HTML5, CSS, JavaScript and Angular skills.

Prerequisite(s): CPST 2200.
A minimum grade of D- is required in CPST 2200.

CPST 3310 Relational Database Design and Development (3)
This course covers design and development concepts for relational database systems. The students will work on the design and development of a database application by analyzing organizational data needs, model and present those needs using diagrams and specifications, exploring different database designs, and implementing the design in a working system. Topics include normalization, entity-relationship modeling, database application design, data base processing using internet technology, managing multi-user data bases, accessing the database server, and sharing enterprise data.

Prerequisite(s): CPST 2300.
A minimum grade of D- is required in CPST 2300.

CPST 3400 Website Development with XML/XHTML (3)
This course is designed to provide students with an introduction to programming using XML. Students taking this course should have a working knowledge of HTML and FTP as gained by completing the course Webpage Design and Development course. Students should have a basic understanding of programming concepts and a relational database including relationships of primary and secondary tables via keys and foreign keys. Some sample learning activities are: author XML documents using a given Document Type Definition (DTD); create a DTD; create a CSS and/or XSLT style sheet; create an XML-based information system that brings together the skills learned throughout the course.

Prerequisite(s): CPST 2400.
A minimum grade of D- is required in CPST 2400.

CPST 3410 Website Development with JavaScript (3)
This course provides the opportunity to obtain a solid understanding of some of the tools and techniques, beyond basic HTML, used to publish on the Internet via the World Wide Web. Through online 'lectures' and posted materials, electronic discussions, and hands-on 'lab' work you will become acquainted with the computer hardware, software (both used on your machine and the Net), and programming techniques needed to design, create and maintain fully interactive Web documents and sites. This course will focus primarily on JavaScript programming and some additional advanced techniques and concepts.

Prerequisite(s): CPST 2400.
A minimum grade of D- is required in CPST 2400.

CPST 3500 Information Technology Project Management (3)
This course provides an introduction to the principles and application of project management techniques with an emphasis on the design and management of Information Systems. Topics include project planning, work team design, project estimation techniques, project reporting, identifying and controlling project risks, budgets, and quality assurance.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 3550 Systems Analysis and Design (3)
Examines the concepts, tools, and techniques used to develop and support computer-based information systems. Systems planning, analysis, design, and implementation are covered. Techniques for studying, documenting, specifying, designing, implementing and testing small and/or enterprise-wide business systems. Analysis and design includes structured and object-oriented methods, using CASE tools.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 3610 Internet Server Administration with IIS (3)
This course will provide students with a comprehensive understanding of all facets of Microsoft Windows server based Web service installation, configuration, administration, and maintenance. The course will focus on hardware, software, Internet protocols, and advanced Web server hosting and services. It provides students with the understandings and skills needed to effectively plan, implement, and deploy valuable World Wide Web services in a professional or personal capacity.

Prerequisite(s): CPST 2600 and 2400.
A minimum grade of D- is required in CPST 2600 and CPST 2400.

CPST 3650 Linux Administration and Security (3)
This course will provide students with a comprehensive understanding of all facets of Linux/Unix server based Web service installation, configuration, administration, and maintenance. The course will focus on hardware, software, Internet protocols, and advanced Web server hosting and services. It provides students with the understandings and skills needed to effectively plan, implement, and deploy valuable World Wide Web services in a professional or personal capacity.

Prerequisite(s): CPST 2500.
A minimum grade of D- is required in CPST 2500.

CPST 3750 Cyber Defense (3)
This course offers an overview of security issues in networks, applications, and operating systems and demonstrates how current and future commercial systems may be designed to ensure confidentiality, integrity, and availability. It covers principles and methods of discovering and exploiting security vulnerabilities. This course provides students with real world cybersecurity scenarios in a virtual lab environment. Students will learn to apply academically sound cyber defense strategies to mitigate cyber vulnerabilities in simulated environments. Best practices in securing systems, applications, and networks will be reviewed in depth after students complete the virtual lab assignments.

Prerequisite(s): CPST 2700, 2500 and 2600.
A minimum grade of D- is required in CPST 2700, CPST 2500 and CPST 2600.

CPST 3930 Cyber Threats and Cybersecurity (3)
Cyberspace has become a pervasive presence in modern society, and a healthy functioning cyberspace is essential to our economy and to national security. Along with benefits, however, there exist threats and malicious actors who seek to exploit cyberspace vulnerabilities. This course will study the nature of cyber threats, including computer and digital crimes, information warfare and cyber terrorism, and related threats to personal, organizational, economic and national security. Students will gain an understanding of the variety and nature of cyber threats including digital espionage, computer break-ins, computer hacking, viruses, communications eavesdropping, forgery, disruption to information flow, electronic bombs and the growing presence of terrorist organizations on the Internet, and how the Internet is used to further terrorist activities. The course will also cover countermeasures to cyber threats; cybersecurity investigations, evidence gathering, and legal challenges; and current and national policies for securing cyberspace and the impact of cybersecurity on privacy and civil liberties.

CPST 4000 Independent Studies (1-4)
Independent Study course

Course Limit: 2

CPST 4100 Special Topics (3)
Special Topics in Information Technology.

Prerequisite(s): CPST 2300.
A minimum grade of D- is required in CPST 2300.

CPST 4101 SCRUM Development Method (3)

CPST 4200 PHP and Data Structures (3)
This course is for anyone who wants to learn how to build and maintain websites that use PHP with Data Structures. The prerequisites for this course is that you have basic HTML and CSS skills. This course gets you started with PHP and Data Structures as quickly as possible and then builds out your skills in a professional way. This course presents an array of PHP and Data Structure skills in a manageable progression designed to allow you to develop websites. Ever since it was created in 1995, PHP has been a favorite of developers for server-side web programming. In some surveys, it stands as today's most popular web programming language. By most counts, over a million websites have been written in PHP, including portions of today's largest, most recognizable sites, and often in tandem with databases.

Prerequisite(s): CPST 2200 and 2300.
A minimum grade of D- is required in CPST 2200 and CPST 2300.

CPST 4270 Advanced Application Development for Industry (3)
The purpose of this course is to build upon fundamental programming concepts learned in prerequisite courses and provide students with advanced application development skills needed for industry employment including source version control, database connectivity, incorporating SQL into applications, and utilizing code libraries in the development process.

Prerequisite(s): CPST 3220, 2300 and 2200.
A minimum grade of D- is required in CPST 3220, CPST 2300 and CPST 2200.

CPST 4310 Certified Ethical Hacking (3)
The course offers immersive experience in ethical hacking methodologies using cyber range labs, allowing participants to gain practical skills in key areas such as reconnaissance, system access, vulnerability exploitation, and data exfiltration. In addition to learning the tools and techniques used by cyber adversaries, this course focuses on adopting a hacker's mindset to better defend against cyber threats. Content in this course is aligned to the EC-Council "Certified Ethical Hacker (CEH)" professional certification, and students who successfully complete the course will be authorized to take the CEH exam.

Prerequisite(s): CPST 2700.
A minimum grade of D- is required in CPST 2700.

CPST 4320 Business Intelligence (3)
This course introduces students to structures and techniques used to transform data into information for decision-making. Business intelligence is an increasingly important part of both small and large organizations, as well as government. Business intelligence can be used across a wide spectrum of enterprises, such as health care, exploration, security, identifying markets, predicting behavior and forecasting demand. The materials in this course are designed to give the student important new tools to assist in business decision making, whether this involves identifying new markets, extracting data to better understand current markets and forecasting demand using simple statistical methodologies.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 4340 Database Administration- Structured Query Language (3)
A technical overview for SQL Server administration. SQL Server offers a platform for enterprise data management, robust development, and implementation of modern databases. Students will be exposed to how to install, administer, maintain and troubleshoot Microsoft SQL Server Databases. This course also provides students with the technical skills required to write basic Transact-SQL queries for Microsoft SQL Server. Server Students will work in a lab environment to install SQL Server 2016 and will then work through a series of various activities to learn the crucial tasks of an SQL Server administrator.

Prerequisite(s): CPST 2300.
A minimum grade of D- is required in CPST 2300.

CPST 4350 Database Administration-Oracle (3)
This course provides the student with a fundamental understanding of the tasks and issues associated with database administration. Topics and activities include: installation and management of a database system; ensuring data integrity; managing users, privileges, and resources, implementing of basic backup and recovery procedures and identifying tuning opportunities. Students will work in a lab environment to install a database management system, and will then work their way through a series of crucial system-side activities to learn the various tasks of a database administrator.

Prerequisite(s): CPST 2300.
A minimum grade of D- is required in CPST 2300.

CPST 4500 System Requirements Development and Testing (3)
This course provides a study of concepts and techniques for planning and developing high quality information systems. Fundamentals of specification (including formal models and representations, documents, and standards) are examined. Methods of specifying and developing requirement for generating information systems are discussed. It covers the tools, methods, and current practices for assessing the quality and correctness of information systems. Topics include the roles of testing and formal verification, fundamentals and formal models of program verification, planning and documentation for quality assurance, methods of performing technical reviews, strategies of system testing and integration planning, and principles and practices used in conducting tests. Projects using these techniques are included.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 4610 Windows Server Administration (3)
This course is designed to prepare the student for the challenges faced by network administrators, helpdesk technicians, and network analysts. Individuals working in these areas have the responsibility for installing and maintaining local area networks based on Microsoft Windows and other network operating systems. This course provides hands-on experience planning, deploying, and administering a network using Microsoft Windows Server based systems.

Prerequisite(s): CPST 1200 and 2500.
A minimum grade of D- is required in CPST 1200 and CPST 2500.

CPST 4640 TCP/IP Protocol (3)
This course will focus primarily on the TCP/IP protocol suite and a set of related network services. It is designed to help students understand networks that use TCP/IP, the suite of protocols that is used today for the Internet and most modern networks.

Prerequisite(s): CPST 2600.
A minimum grade of D- is required in CPST 2600.

CPST 4650 Unix System Administration (3)
The Solaris Operating System (Solaris OS) is the foundation on which some of the world's leading companies are built. Offering high levels of reliability, availability, security, and scalability, Solaris systems meet today's demands while anticipating tomorrow's innovation. The objective of this course is to provide a comprehensive understanding of the administrative aspects of the Solaris operating system. At the end of the course students will have the skills required to administer a Solaris system, including user management, disk management, backing up procedures, startup and shutdown procedures, and process management. The course provides students with the opportunity to integrate and apply administration in a comprehensive manner indicative of Information Technology programs of study.

Prerequisite(s): CPST 1200 and 2500.
A minimum grade of D- is required in CPST 1200 and CPST 2500.

CPST 4670 Identity and Access Management (3)
This course is designed to familiarize students with the skills needed to administer a Microsoft network in the enterprise. The course provides an in-depth look at the features of Active Directory, including Group Policy, scripting, replication, and disaster recovery, plus the use of Exchange Server in the enterprise for reliable messaging services.

Prerequisite(s): CPST 4610.
A minimum grade of D- is required in CPST 4610.

CPST 4710 Information Technology Program Capstone (3)
Required Capstone course for all BS in Information Technology students. All Major/concentration required courses must be completed prior to taking this course. The purpose of this course is to provide a summative crowning achievement towards the undergraduate concentration. This workshop style course involves major semester-long deliverables as part of the capstone project. The capstone project allows students to apply theoretical and practical knowledge acquired during the Info Tech program. The capstone project will require a student to leverage their previous body of work to successfully complete. The capstone portfolio should demonstrate student mastery for each of the Program Learning Outcomes.

Prerequisite(s): CPST 1200, 2200, 2300, 2500, 2600, 2700 and 3050.
A minimum grade of D- is required in CPST 1200, CPST 2200, CPST 2300, CPST 2500, CPST 2600, CPST 2700 and CPST 3050.

CPST 4750 Internet Protocol Routing and Switching (3)
The TCP/IP suite of protocols is the de facto standard for multi-vendor connectivity within corporations and serves as the basis for Internet connectivity. This course focuses on Internet communications architecture and the internetworking between autonomous systems that is facilitated by IP routing. Layer 2 and Layer 3 (IP Switching) architectures will also be examined in relation to interLAN and VLAN routing.

Prerequisite(s): CPST 2600.
A minimum grade of D- is required in CPST 2600.

CPST 4770 Advanced Internet Protocol Networking (3)
A comprehensive overview of networking topics, at an advanced level. Students will focus on core concepts that will allow the experienced network individual to understand the “why” behind the protocols they work with every day and see the big picture of networking. This course explores advanced switching concepts such as Spanning Tree and link aggregation. Dynamic Routing Protocols are covered in detail. Students will be exposed to advanced hands-on routing and real-world switching exercises.

Prerequisite(s): CPST 4750.
A minimum grade of D- is required in CPST 4750.

CPST 4810 Windows Security (3)
In this course, students learn to apply security industry best practices and to harden the Windows operating system in a variety of configurations and roles. Students learn how to protect Windows-based systems from attacks, reconfigure the operating system to fully protect it, and scan hosts for known security problems. By the end of the course, students have a solid understanding of the security architecture of Windows operating systems.

Prerequisite(s): CPST 4610.
A minimum grade of D- is required in CPST 4610.

CPST 4850 Penetration Testing (3)
This course provides an introduction to computer and network security penetration testing techniques, tools, and methodologies.? It will provide an overview of activities that are used during the planning, reconnaissance, scanning, exploitation, post-exploitation, and reporting phases of a penetration testing process.

Prerequisite(s): CPST 2600 and 2700.
A minimum grade of D- is required in CPST 2600 and CPST 2700.

CPST 4870 Forensics Investigation and Response (3)
This course provides forensics analysis skills through use of forensics tools and techniques, and forensic lab practices. The course also covers investigation and response to cyber-attacks. Students will be exposed to forensic evaluation of evidence, and determination of breach impact as essential components in a cyber security response plan. Methods of planning, documenting and implementing a practical cyber security forensics approach for information systems are discussed. The course uses case study and subject matter expert best practices to provide insight and learning on modern computer system forensics.

Prerequisite(s): CPST 2700 and 2500.
A minimum grade of D- is required in CPST 2700 and CPST 2500.

CPST 4910 Special Topics (3)
This course is a special offering in the Information Technology program.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 4911 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4912 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4913 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4914 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4915 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4916 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4917 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4918 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4919 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated up to unlimited credit hours.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

Maximum Hours: 99

CPST 4920 Special Topics (3)
This course is a special offering in the Information Technology program.

Prerequisite(s): CPST 1200.
A minimum grade of D- is required in CPST 1200.

CPST 4930 Network Security (3)
This course is designed to provide fundamental skills needed to analyze the internal and external security threats against a network, and to develop security policies that will protect an organization?s information. Students will learn how to evaluate network and Internet security issues and design, and how to implement successful security policies and firewall strategies. In addition, they will learn how to expose system and network vulnerabilities and defend against them.

Prerequisite(s): CPST 2600 and 2700.
A minimum grade of D- is required in CPST 2600 and CPST 2700.

CPST 4950 Website Security (3)
This course is designed to provide students with an introduction to Website security and privacy issues. Students will understand how to identify security/privacy issues, recognize security issues involving JAVA, the Internet and email. Students will also explore techniques and best practices for limiting risk.

Prerequisite(s): CPST 2200, 2500 and 2700.
A minimum grade of D- is required in CPST 2200, CPST 2500 and CPST 2700.

CPST 5001 Internship (0-3)
This internship will relate course academic concepts to industry employment. All Information Technology internships must be approved by Program Director.

Enrollment limited to students in the Information Technology department.

CPST 5380 Junior Year Abroad (1-20)
Junior Year Abroad.

Maximum Hours: 99

CPST 6010 Information Technology Fundamentals (3)
This course provides an overview of the concepts of modern information systems, information processing, data storage, critical infrastructure and information security and how these systems and aspects inter-relate. The course includes the key technologies and components that make up modern information systems as well as professional and ethical considerations when managing an Information Technology environment.

CPST 6050 Application Development Fundamentals (3)
This course provides an overview of application development principles. Core concepts include code constructs, problem analysis, algorithm design and solution implementation in a computer development language. Students will learn how to analyze business problems and create solutions through the development of technology applications. Students will study the basic concepts of development, internal representation of data, simple data types, searching and sorting techniques. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.

CPST 6100 Networks and Systems (3)
This course covers topics related to computer network connectivity and data exchange between digital devices. Students will examine common networking terminology, and perform hands-on exercises using existing and emerging networking standards, protocols and architectures. Also covered are network operating systems, topologies, structured cabling, communications protocols, virtualization of servers, storage and enterprise technology infrastructure, including cloud. This course is intended to provide a solid foundation for further study of IT networking connectivity, IT infrastructure, and cloud computing principles.

CPST 6110 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6111 Special Topics (3)
This course is a special offering in the Information Technology program. Course may be repeated unlimited times for credit.

Course Limit: 99

CPST 6112 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6113 Special Topics (3)
This course is a special offering in the Information Technology program.

Maximum Hours: 99

CPST 6114 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6115 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6116 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6117 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6118 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6119 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6120 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 6150 Database, Data Analysis, Data Structures (3)
This course provides an introduction to common database management systems with an emphasis on relational database concepts, database processing, data modeling, database design, development and implementation. Students will be exposed to relational database concepts, database design and modeling, database query using SQL, DDL and DML. This course provides a solid foundation to database administration, data warehouses and cloud services, including Data as a Service (DaaS) and Platform as a Service (PaaS).

CPST 6200 Cybersecurity/Information Security (3)
This survey course provides the student with an overview of cybersecurity and a foundation for understanding the key issues associated with protecting digital and information assets. Students will be exposed to techniques needed to design a consistent, robust architecture that improves an organization's cybersecurity posture. Students will be exposed to the spectrum of cybersecurity activities, devices, methods, methodologies, tools and procedures. Coverage will include auditing, inspection, prevention, detection, and response to cybersecurity threats, an overview of cybersecurity governance, and common cybersecurity roles.

CPST 6250 Enterprise Information Technology (3)
This course covers the basic principles and applications of information technology infrastructure that is used in large enterprises. Utility servers/appliances, server environments, enterprise applications, and cloud architecture will be presented in the course. Key concepts such as security, redundancy, reliability, maintainability, disaster recovery, and availability will be discussed. Students will be provided with an overview of technology architectures, data systems, and the applications that manage enterprise IT system resources.

CPST 6320 Business Intelligence (3)
This course is designed as an upper level undergraduate and graduate level course.This course introduces students to structures and techniques used to transform data into information for decision-making. Business intelligence is an increasingly important part of both small and large organizations, as well as government. Business intelligence can be used across a wide spectrum of enterprises, such as health care, exploration, security, identifying markets, predicting behavior and forecasting demand. The materials in this course are designed to give the student important new tools to assist in business decision making, whether this involves identifying new markets, extracting data to better understand current markets and forecasting demand using simple statistical methodologies.

CPST 6500 Systems Requirements Development and Testing (3)
This course provides a study of concepts and techniques for planning and developing high quality requirements management processes and hardware/software testing processes. Fundamentals of requirements analysis are examined, highlighting the importance and value of good requirements. Methods of planning and implementing a practical requirements gathering approach for information systems are discussed. Testing roles, techniques, and processes will be covered and it will be shown where and how the software testing process fits into the overall development methodology. Formal models of program verification, planning and documentation for quality assurance and methods of performing technical reviews will also be detailed. Strategies of system testing and integration planning including principles and practices used in conducting tests will be covered.Subject matter experts will be brought in to share with the class project examples and how they use these requirements management and test techniques in these projects.

CPST 6501 Information Technology Project Management (3)
This course provides an exploration into the tools and techniques of project management as they relate to information technology (IT) projects and software development. The course concepts adhere to the Project Management Body of Knowledge® (PMBOK®) description of best practices, and it covers the project management life cycle with its processes of initiating, planning, executing, monitoring and controlling the project. Emphasis is placed on areas of project planning and project management that are unique to software development projects and other IT projects.

CPST 6710 ITIL/DevOps Certification (3)
This course is designed to introduce two information technology philosophies to students – ITIL and DevOps. The course will examine why they are used, explore basic principles/concepts/processes for each, and prepare students for their foundational certification exams.

CPST 6750 Cyber Defense (3)
This course offers an overview of security issues in networks, applications, and operating systems and demonstrates how current and future commercial systems may be designed to ensure confidentiality, integrity, and availability. It covers principles and methods of discovering and exploiting security vulnerabilities. This course provides students with real world cybersecurity scenarios in a virtual lab environment. Students will learn to apply academically sound cyber defense strategies to mitigate cyber vulnerabilities in simulated environments. Best practices in securing systems, applications, and networks will be reviewed in depth after students complete the virtual lab assignments.

CPST 7000 Information Technology Governance and Policy (3)
The managing of information has become critical to the success of a business or enterprise and the governance of the Information technology (IT) resource has become an integral part of most organizations and is fundamental to support, operate, sustain, innovate and grow a business. IT Governance focuses on delivering value to the business by the proper management of the IT resource. It is an integrated approach consisting of the leadership, organizational structures and processes that ensures the effective alignment of IT with the organizations strategies and objectives. This course presents an inter-disciplinary approach to IT Governance. In the course students will learn about specific objectives of IT Governance, along with standards, frameworks, tools and techniques used in the planning, deploying, managing, monitoring, measuring and sustaining a successful IT governance plan. The course leverages and integrates current and emerging industry best practices, standards, guidelines and governance case studies.

CPST 7100 Cyber Technology Program Capstone (3)
This course is designed for graduate students who are, or aspire to be, either business managers or information systems (IS) managers, as well as those who are, or aspire to be, primarily technology specialists who will work in and for different types of businesses, including consultant firms and other firms competing in an information technology (IT) services industry. This course builds upon, and reinforces, all previous courses within the IT management portfolio by providing a realistic scenario through which the student must continuously apply previously learned concepts to develop or revise policies, architectures, business case and risk analyses, and supporting processes and contracts required to plan, design, operate, maintain, and manage a network and lead the IT department's personnel. Upon completion of this course, the student should have a working model and useful artifacts for the policies, processes, and required actions to run an effective IT department. In this course, each student will continue to play the role of the CIO-in-training for South Balance. The course will take the student through a continuous scenario that will build each week and help the student develop a complete digital technology transformation plan for the final project. In this Capstone course, students will apply cybersecurity management concepts, best practices, technical knowledge and principles as learned throughout the Program from the perspective of an organizational CSO/CISO. Through Case Study, students will display mastery of these through the creation of deliverables necessary to manage an effective enterprise cybersecurity program. This will include review/documentation of an IT organization's security posture, and creation of a RiskManagement structure, Security Policy/Operational Framework, and Budget.

Prerequisite(s): CPST 7000, 7150, 7200, 7600, 7800 and 7900.
A minimum grade of B- is required in CPST 7000, CPST 7150, CPST 7200, CPST 7600, CPST 7800 and CPST 7900.

CPST 7150 The Business of Information Technology (3)
The goal of this course is to provide MPS candidates with experience in handling business processes that are necessary to successfully manage the business aspects of Information Technology. It covers business concepts and processes that are germane to the management and use of Information Technology including Accounting and Finance, Human Capital and Payroll, Budget, Contract Management, Proposals/Requests for Proposals, Statements of Work, and Service Level Agreements. Additionally, methods and approaches for performing cost-benefit analysis, procurement, making business cases for technology/cybersecurity, IT budgeting, and working with contractors and consultants will be reviewed.

CPST 7200 Enterprise Application Architecture (3)
The goal of this course is to prepare CIOs, CTOs, and senior managers with progressive approaches for state-of-the-art Information Technology (IT) infrastructures. IT systems exist in an abstraction of an Operating Environment with identifiable system capabilities –physical properties, characteristics, strategies, tactics, and security. This course explores the analysis, design, implementation, evaluation, and management of enterprise IT solutions including interaction with other enterprise applications. Topics include planning/modeling, Conceptual/Logical/Physical design, and management considerations. This course also examines modern trends and approaches in enterprise application architecture design.

CPST 7250 Software Development Methods (3)
A Software Development Methodology is a framework that is used to structure, plan, and control the process of developing an information system - this includes the pre-definition of specific deliverables and artifacts that are created and completed by a project team to develop or maintain an application. A wide variety of such frameworks have evolved over the years, each with its own recognized strengths and weaknesses. This course explores the many methodologies available for developing software. The business culture and requirements are presented as the center for evaluation of the most effective mix of methodologies for a specific development project. Students will study the software lifecycle from the identification of a need to the retirement of the software product that satisfies that need. They will learn about the strength and weakness of the various development methodologies and the appropriate situations in which to use them.

CPST 7310 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7311 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7312 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7313 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7314 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7315 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7316 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7317 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7318 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7319 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7320 Special Topics (3)
This course is a special offering in the Information Technology program.

CPST 7600 Enterprise Infrastructure Architecture (3)
Enterprise Hardware Architecture (EHA) maximizes business functionality, minimizes risk, simplifies operations, and complies with regulatory requirements. This course will provide students with the knowledge to build an open/standards-based Enterprise Hardware Architecture that utilizes virtualization of servers, storage area networks (SAN), and network capabilities. Utility servers/appliances, Multi-tier server environments, and Cloud architecture will be researched and presented in the course. Key performance parameters, such as security, redundancy, reliability, maintainability, and availability, will be major considerations in the designs. A decision based approach and iterative improvement processes based on service fulfillment and technology trends will be utilized by students to design individual class projects.

CPST 7760 Cloud-based Data Analytics (3)
As industry's move to increased use of cloud-based "data as a service" offerings, including Data Platform (PaaS), Infrastructure (IaaS), and Software (SaaS), Information technologists including IT Managers and Cybersecurity Managers need to understand how to leverage cloud in the enterprise to enable data analytics at scale, at speed and to enable wide access. This course will introduce data analytics in conjunction with leveraging cloud-based services.

CPST 7770 Cloud-based Machine Learning and Artificial Intelligence (3)
As industries move to increased use of cloud-based data "as a service" offerings, including Data Platform (PaaS), Infrastructure (IaaS), and Software (SaaS), this course will help IT Managers and Cybersecurity Managers understand how to enable functional machine learning and AI by leveraging cloud solutions.

CPST 7780 Applied Artificial Intelligence (3)
Applied Artificial Intelligence delivers the practical skills needed to build and deploy intelligent solutions. This course leverages cloud platforms and industry-standard tools to provide hands-on experience in machine learning, deep learning, and other key AI areas. Through projects and case studies, participants will learn to solve real-world business problems with AI, driving innovation and creating value within their organizations.

CPST 7800 Cyber Law and Policy (3)
This course is designed to analyze legal issues related to the management of information in contexts in which information professionals are likely to be involved. In an age defined by information, knowledge of the legal issues that establish how information is required to be protected, maintained, collected, stored, and accessed is extremely important. Information Security policies must be evaluated in light of current laws and regulations This course will provide an overview of some of the most important legal issues in managing information so that students will be able to apply the information to particular professional situations that they may encounter. Topics will include such issues as US and international jurisdiction, computer security, intellectual property, electronic commerce, information privacy, freedom of expression, and cyber-crime. Included are analyses of significant legal case studies plus review of applicable federal and state legislation as applied to compliance of standards such as those found in the Health Insurance Portability and Accountability Act (HIPPA), Sarbanes Oxley, the Federal Information Security Management Act (FISMA), and the National Institute of Standards and Technology, Minimum Security Requirements for Federal Information and Information Systems (FIPS 200).

CPST 7850 Leading Transformational Change in Information Technology (3)
Technology can serve as a catalyst for change in an organization. In today's work environments, almost every organizational change is accompanied by a change in the of the organization. In this course, students will learn the difference between leadership and management generally and also specifically within IT. They will learn how IT can affect positive change and, most importantly, how to minimize the chance of project failures. The course begins with the journey of technology and the speed of change in this industry. With the context set, students then learn about the organizational (individual and macro) and commercial implications of change. The course will also cover topics from major milestones in IT, organizational behavior at the individual and organizational level, and change management to include budgeting for change, vendor management, vision setting, and execution.

CPST 7875 Independent Study (1-3)

CPST 7900 Security and Cyber Threats for Information Technology Managers (3)
This course provides an overview of the need for, and the technology, algorithms, and standards used in providing computer and communications security. It is concerned with the fundamentals of computer security. Topics in this class can be divided into three main parts: cryptography (with a focus on single-key and public key); computer system security (database and operating systems issues including authentication, access control, malicious software, and network security (including intrusion prevention/firewalls, intrusion detection, Denial of Service attacks, etc.); and the develop of secure programs and applications.