[ARCHIVED CATALOG]

Course Descriptions

Contract All Courses |

For schedule and detailed course information, including schedule types, please see the Class Schedule and Course Descriptions webpage.

Schedule Type Classifications

The delivery of instruction often requires educational material to be organized and presented to students in a variety of ways. In order to facilitate the planning for and scheduling of classes to accommodate these multiple types of instruction, it is necessary to divide courses into organizational parts which reflect the unique combinations of instructors, meeting places, and time patterns used to conduct the instruction. The schedule types listed below are intended to reflect the nature of activities required of students, the relationship between students and their instructors, and the settings required to deliver the content of an instructional offering.

- LEC — Lecture
- LAB — Laboratory
- DIS — Distance Education
- CLN — Clinic
- EX — Experiential
- IND — Individual Study
- SD — Studio

Computer Graphics Technology

CGT 52000 - Computer Graphics Programming

Prerequisite(s): CGT 51100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides a working knowledge of computer graphics programming using OpenGL and C++. OpenGL is the platform independent industrial standard APL and the leading edge technology for computer graphics application design. It has been used in the gaming industry, as well as in research and for scientific visualizations. The course focuses on creating real-time and interactive applications and is structured into several blocks; OpenGL introduction, modeling, texturing, transformations, lighting, and interactive application design. Students will develop various applications through the course focusing different aspects of computer graphics programming. Typically offered Fall Spring Summer.

View Class Schedule

CGT 58100 - Workshop In Computer Graphics Technology

Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education. Typically offered

Summer Fall Spring.

View Class Schedule

Computer and Information Technology

CNIT 10500 - Introduction To C Programming

Credit Hours: 3.00. This course is an introduction to computer programming using the “C” language. The emphasis is on structured programming principles, and understanding the basic concepts that apply to engineering problems. Among topics covered in this course are: problem solving using top down design, using flowcharts to explain the program logic, selection structure, repetition structure, bitwise operations, arrays, pointers, strings, passing arguments, and sequential files. Typically offered Summer Fall Spring.

View Class Schedule

CNIT 14100 - Internet Foundations, Technologies, and Development

Prerequisite(s): CNIT 19000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 10100 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. (CGT 14100) This course explores the history, architecture and development of the World Wide Web. Current tagging and scripting languages are covered in a tool independent environment. Topics also include authoring tools, design, graphic and multimedia formats, and commerce, implementation and security issues. PC literacy required. Typically offered Summer Fall Spring.

View Class Schedule

CNIT 15500 - Introduction to Object-Oriented Programming

Prerequisite(s): CNIT 19000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 10100 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course introduces fundamental software development concepts common to most programming languages. Topics include: problem solving and algorithm development, debugging, programming standards, variable, data types, operators, decisions, repetitive structures, modularity, array, user interface construction, software testing and debugging. A broad range of examples will be used throughout the course to show how each programming concept applies to real life problems. Typically offered Fall Spring Summer.

View Class Schedule

CNIT 26700 - Introduction To C++ Language Programming

Credit Hours: 3.00. This course is an introduction to C++ language programming for persons with prior programming experience. Course topics include data types, control flow, operators and expressions, and an introduction to class construction including other object-oriented concepts and constructs. Applications are designed for business, manufacturing, or technology, depending on audience. Typically offered Fall Spring Summer.

View Class Schedule

CNIT 27600 - Systems Software And Networking

Prerequisite(s): CNIT 17600 FOR LEVEL UG WITH MIN. GRADE OF C- AND (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D- OR APPL FOR MIN. SCORE OF 60 OR S12 FOR MIN. SCORE OF 560 OR A02 FOR MIN. SCORE OF 23)

Credit Hours: 3.00. Introduction to a wide range of topics in the networking field. Topics include: systems and network administration support practices, desktop and server support, security, disaster recovery, ethics, change management, help desks, networks, network operating systems, and directory services. The students will gain hands-on experience in the laboratory with installing and configuring network operating systems and application software. Typically offered Fall Spring.

View Class Schedule

CNIT 34300 - Advanced System And Network Administration

Prerequisite(s): CNIT 33000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on the tasks and issues involved in the installation and administration of distributed computing systems. Topics include the administration of network operating systems, UNIX system administration, and network system interoperability. In the laboratory portion of the course, students implement and maintain local area network and UNIX servers. Typically offered Fall Spring Summer.

View Class Schedule

CNIT 35500 - Software Development For Mobile Computers

Credit Hours: 3.00. This is an advanced programming course that teaches students the skills necessary to develop applications for mobile computing devices (e.g. Smartphones and tablet computers). Combining theory and practice, this course gives students hands-on experience with the latest technologies, tools and techniques used to develop mobile software solutions for business and entertainment. Typically offered Fall Spring Summer.

View Class Schedule

CNIT 48000 - Managing Information Technology Projects

Prerequisite(s): CNIT 37200 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 33000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 35000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces the application of knowledge, skills, tools, and techniques that project managers use to plan, staff, estimate, and manage information technology projects. Special emphasis is placed on learning and applying the concepts of managing scope, risk, budget, time, expectations, quality, people, communications, procurement, and externally provided services. Students will apply project management technology and techniques to business problems. Typically offered Fall Spring.

View Class Schedule

CNIT 48500 - Topics In Information Systems And Technology

Prerequisite(s): CNIT 48000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will require students to analyze, design, implement, test, and document a complete computer-based information system by using knowledge and techniques acquired from their previous coursework. Students will work on their assigned projects as part of a team. Typically offered Summer Fall Spring.

View Class Schedule

Computer Information Systems

CIS 11100 - Introduction To Human Computer Interaction

Credit Hours: 3.00. This course introduces foundational concepts of human computer interaction. Students focus on human-centered software development, usability testing, and understanding interaction styles. Typically offered Summer Fall Spring.

View Class Schedule

CIS 16600 - Introduction To Programming

Prerequisite(s): MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR APPL FOR MIN. SCORE OF 60 OR S12 FOR MIN. SCORE OF 560 OR A02 FOR MIN. SCORE OF 23

Credit Hours: 3.00. This course is an introduction to computer programming. Emphasis in this course is on the program development life-cycle, structured programming and top-down design. Topics include identifiers, data types, arithmetic operators, if, if/else, looping, case selection, modules, arrays, and an introduction to classes.

Extensive programming exercises are required. Typically offered Fall Spring Summer.
General Education: Technology

View Class Schedule

CIS 18000 - Introduction To Project Management

Credit Hours: 3.00. This course introduces foundational concepts of project management. Students focus on components of IS project management, the impact of IS projects on companies and basic theories of how to manage IS projects. Typically offered Summer Fall Spring.

View Class Schedule

CIS 20000 - Introduction To Information Systems Policies

Prerequisite(s): ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the need for and creation of policies for information systems and their impact on business. Course content will include information security policies, disaster recovery policies, and other related policy topics. Typically offered Summer Fall Spring.

View Class Schedule

CIS 20400 - Introduction To Computer-Based Systems

Credit Hours: 3.00. An introduction to computer-based systems with an emphasis on how computers can assist the user. Computer concepts, terminology, and a survey of programming languages, operating systems, word processing, spreadsheets, database, communications, graphics, and Internet are included. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.
General Education: Technology

View Class Schedule

CIS 23001 - Information Systems Infrastructure

Credit Hours: 3.00. This course introduces principles of computer information systems infrastructure. Students will gain an understanding of hardware and software aspects of IS infrastructure. Besides fundamental concepts of computer hardware and operating systems, students will be introduced to various emerging concepts such as virtualization, cloud computing, databases, computer networking, firewalls, virtual private networks, disaster recovery, network security, and cybersecurity. Typically offered Fall Spring Summer.

View Class Schedule

CIS 24100 - Foundations Of Web Design And Development

Prerequisite(s): MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIA 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to Web design and development. It provides an overview of the Internet, intranets, and extranets. Students learn how to use the Web Development Life Cycle and how to test Web sites for usability. Students use Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and other Web programming languages to create Web pages. The focus is on the impact of Web technology on businesses today. Extensive lab exercises on introductory and advanced Web development techniques are assigned. Typically offered Fall.

View Class Schedule

CIS 25200 - Systems Analysis And Design

Prerequisite(s): COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An introduction to the procedural requirements of the system development cycle (SDLC). Through actual problem solution, the student is introduced to the techniques of system planning, analysis, design, implementation, and evaluation. This course prepares students for careers as business analysts and technical analysts. Typically offered Fall Spring Summer.

View Class Schedule

CIS 25300 - Applied Database Techniques

Prerequisite(s): ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIA 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the applied aspects of database systems and their associated languages. Topics include database terminology and concepts including data modeling, data dictionaries, redundancy, independence, security, privacy, and integrity. Extensive laboratory exercises are assigned. Typically offered Spring.

View Class Schedule

CIS 26300 - Java Programming

Prerequisite(s): CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the Java programming language, including operators, data types, and language syntax; applets versus applications; object-oriented programming; classes, methods, and inheritance; utilizing a graphical user interface; event-driven programming; and Java development and execution environments. Students should be familiar with structured programming concepts and top-down program development. Extensive homework and computer laboratory exercises are assigned. Typically offered Fall Spring.

View Class Schedule

CIS 29000 - Computer Project

Credit Hours: 1.00 to 4.00. Independent study for sophomore students who desire to execute a computer-oriented project. Typically offered Fall Spring Summer.

View Class Schedule

CIS 34100 - Advanced Web Design And Development

Prerequisite(s): CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces students who have learned the basics of HTML to server side web development technologies. Students learn to build real-world, dynamic websites using PHP and MySQL. Extensive programming exercises on advanced Web design and development techniques are assigned. Typically offered Fall Spring Summer.

View Class Schedule

CIS 35300 - Advanced Database Methods

Prerequisite(s): CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CIS 25300 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIA 30800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 30800 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Topics include processing statements of SQL blocks, procedures, functions, packages, dependencies, database triggers, built-in packages, dynamic SQL and Object Technology and code tuning. Students acquire advanced skills in an applied environment reinforcing concepts and techniques of SQL programming. Typically offered Summer Fall Spring.

View Class Schedule

CIS 35500 - Database Management System Implementation

Prerequisite(s): CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course emphasizes the implementation of a relational DBMS. Students will use fourth generation languages and tools to implement design specifications. Additional topics include the implementation of physical data models, backup/ recovery facilities, concurrency control, integrity services and security mechanisms. Students will be assigned implementation projects. Typically offered Spring.

View Class Schedule

CIS 35600 - Topics In Database Programming

Prerequisite(s): CIS 26100 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26300 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26500 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to accessing a relational database using a programming language such as COBOL, C++, JAVA or RPG. focus is on one language during the semester. Topics include defining and controlling transactions, sequential access techniques, use of primary and secondary keys, cursors, report generation, updating techniques, and dynamic SQL. This course is a variable title course. This course can be repeated, with a different title, for credit. Typically offered Fall Spring Summer.

View Class Schedule

CIS 40000 - Information Systems Strategic Planning

Prerequisite(s): CIS 20000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Information systems are covered and their relationship to the overall strategic business plans. Course content will include enterprise resource plans and business process redesign. Typically offered Summer Fall Spring.
Experiential Learning (EL): Yes

View Class Schedule

CIS 41300 - Information Systems Auditing and Control

Prerequisite(s): CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the fundamentals of Information Systems auditing. Emphasis on understanding IS controls, the types of IS audits and the concepts and techniques used in IS audits. Exposure to risk assessment and professional standards in the field of IS auditing are provided. Typically offered Spring Summer Fall.

View Class Schedule

CIS 41400 - Information Systems Professionalism And Ethics

Prerequisite(s): CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course will cover ethical issues regarding the development of software and information systems and discuss the impact of these systems on society and businesses. Professional societies and their roles in information systems including their professional and ethical codes will be addressed. Typically offered Fall Spring Summer.

View Class Schedule

CIS 42400 - Object Oriented Analysis and Design

Prerequisite(s): CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is an in-depth study of the system development life cycle using object oriented analysis and design techniques. Other topics include project management, software quality assurance, computer-assisted software engineering (CASE), and other state-of-the-art techniques that the software engineering profession introduces to support the systems development process. Typically offered Summer Fall Spring.

View Class Schedule

CIS 42600 - Applications Software Development Project

Prerequisite(s): CIS 35300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 34100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 46300 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ISM 48600 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIA 48600 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (ISM 30700 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIA 30700 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. A capstone course integrating the knowledge and abilities gained through the other computer-related courses in the curriculum within a comprehensive system development project. Typically offered Summer Fall Spring.
Experiential Learning (EL): Yes

View Class Schedule

CIS 46300 - Introduction To Mobile Programming

Prerequisite(s): CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 26300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to programming applications for mobile devices. Topics include a survey of various mobile development environments, with a concentration on the fundamentals of Android app development. Students are expected to be familiar with object-oriented programming concepts, preferably using Java or a similar programming language. Programming exercises are emphasized. Typically offered Fall Spring Summer.

View Class Schedule

CIS 49000 - Senior Project

Credit Hours: 1.00 to 4.00. Independent study for seniors who desire to execute a complete computer oriented project. Typically offered Fall Spring Summer.

View Class Schedule

CIS 49500 - Internship In Computer Information Systems

Credit Hours: 0.00 to 4.00. A special course in selected areas of computer information systems, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Typically offered Fall Spring Summer.
Experiential Learning (EL): Yes

View Class Schedule

CIS 49900 - Undergraduate Research In Computer Information Systems

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while earning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance. Typically offered Fall Spring Summer.
Experiential Learning (EL): Yes

View Class Schedule

Computer Science

CS 10000 - An Introduction To Computer Science

Credit Hours: 1.00. This course is intended to: integrate freshman computer science majors into the department; help them adjust to university life; assist them in developing their academic and intellectual capabilities; introduce them to contemporary issues in computer science; provide an overview of the careers open to those with degrees in computer science. this course must be taken pass/no pass only. Credit by examination is not available for this course. Typically offered Fall.
General Education: First Year Experience

View Class Schedule

CS 12300 - Programming I: Java

Prerequisite(s): MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR APPL FOR MIN. SCORE OF 75 OR S12 FOR MIN. SCORE OF 610 OR A02 FOR MIN. SCORE OF 26

Credit Hours: 4.00. Introduction to the fundamental concepts of programming and problem solving using the Java programming language. Topics include variables, expressions, operators, data types, control structures, methods, objects, arrays, classes, simple I/O, testing, and debugging strategies. This course provides a foundation for more advanced programming techniques, including object-oriented programming and design.
General Education: Technology

View Class Schedule

CS 12400 - Programming II: Object-Oriented Java

Prerequisite(s): CS 12300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. A continuation of CS 12300 which focuses on object-oriented programming along with the fundamentals of object-oriented design. Topics include classes, encapsulation, inheritance, polymorphism, abstract classes, interfaces, class hierarchies, generics, streams, exceptions, abstraction, problem decomposition, collection classes, iterators, GUI's, and event-driven programs.

View Class Schedule

CS 12600 - Systems Programming In C

Prerequisite(s): CS 12300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to programming and using a computer system. The programming languages used are C and the command-line shell. The C topics include pointers, arrays, structs, unions, memory allocation and management, memory layout, program structure, multiple source files, data representation, system calls and library functions, buffers, file abstraction and access, profiling. The command-line topics include file and directory structures, permissions, I/O redirection, pipes, environment variables, command-line utilities, remote access, version control, simple shell scripts.

View Class Schedule

CS 14000 - Introduction To Data Processing (Visual Basic)

Credit Hours: 3.00. Not available for credit toward graduation in the School of Science or for computer technology majors. Intended for students who expect to use computers outside the physical sciences and engineering. Introduction to the Visual Basic programming language and the development of event-driven programs.. Typically offered Fall Spring Summer.

View Class Schedule

CS 15800 - C Programming

Credit Hours: 3.00. Introduction to structured programming in C. Data types and expression evaluation. Programmer-defined functions including passing parameters by value and by address. Selection topics include if/else/else-if, conditional expressions, and switch. Repetition topics include while, do-while, for, and recursion. External file input and output. Arrays, analysis of searching and sorting algorithms, and strings. Pointers and dynamic memory allocation. Students are expected to complete assignments in a collaborative environment. CS 15800 may be used to satisfy College of Science requirement of participation in at least one team-building and collaboration experience. Typically offered Summer Fall Spring.

View Class Schedule

CS 20600 - Computer Algebra And Programming

Prerequisite(s): MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Using a computer algebra system to solve mathematics problems, learning how to translate mathematical notation and procedures into the language of the computer algebra system. Learning the basic concepts of programming languages, comparing programming concepts with mathematical concepts. Typically offered Fall.

View Class Schedule

CS 22300 - Computer Architecture And Assembly Language

Prerequisite(s): CS 12600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the fundamental concepts of computer architecture progressing from the

digital logic level to the microarchitecture level and then to the instruction set level. Assembly language and the assembly process will also be included. Typically offered Fall.

View Class Schedule

CS 27500 - Data Structures

Prerequisite(s): CS 12400 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR ECE 25100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Data structures describe the way that computer programs organize and store information. This course introduces the specification, representation and manipulation of the basic data structures common to much of computer programming such as: linked lists, arrays, stacks, queues, strings, trees, graphs, search trees, heaps, hash tables, and B-trees. Typically offered Fall.

View Class Schedule

CS 30100 - Language Competency

Prerequisite(s): CS 12000

Credit Hours: 1.00. A course intended to give the student experience in an additional high-level language. Each section of this course is the responsibility of a particular faculty member who will advise the student and assign programming projects. A student may receive credit for at most three of these sections, but for no section whose language was a major component of a course for which credit has already been attained. Typically offered Fall Spring Summer.

View Class Schedule

CS 30200 - Operating Systems

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An operating system manages all of the hardware and software resources of a computer. This course provides an introduction to the basic concepts and terminology of operating systems. Topics will include multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems. Typically offered Spring.

View Class Schedule

CS 30303 - Internship In Computer Science

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00 to 3.00. Directed in-service experience with employers that may include but not limited to government agencies, private industry, and community organizations. Pre-approval of the department required before internship has begun.
Experiential Learning (EL): Yes

View Class Schedule

CS 30900 - Discrete Mathematical Structures

Prerequisite(s): MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is the study of finite and discrete mathematical structures relating to the theory of computation. Topics will include directed and undirected graphs and their relation to these structures, combinatorial problems inherent in computation, Boolean algebra, and recurrence relations. Typically offered Spring.

View Class Schedule

CS 31600 - Programming Languages

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The study of programming language features and their implementation in different types of programming languages. The design goals and motivations for various languages will be discussed. Topics will include a comparison of block-structured, object-oriented, functional, and logic programming languages. The advantages and disadvantages of each type of language will be considered. Specific examples of each type of language will be included. Typically offered Spring.

View Class Schedule

CS 33200 - Algorithms

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An algorithm is a procedure for solving a problem in a finite number of steps. Algorithms, along with data structures, form the fundamental building blocks of computer programs. The types of algorithms discussed will include sorting, searching, probabilistic, graph, and geometric algorithms. The following algorithm techniques are covered: backtracking, divide and conquer, branch and bound, greedy method, and dynamic programming. Typically offered Fall.

View Class Schedule

CS 33600 - Network Programming

Prerequisite(s): CS 30200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to computer networks and the programming of network applications. This course will emphasize using the Sockets API to implement application layer protocols, especially the HTTP protocol used by web servers. In addition, the course will cover network abstraction layers from a programmer's perspective, explaining what is needed in order to write correct, reliable network programs.

View Class Schedule

CS 34200 - Introduction To Computer-Based Biomedical Image Analysis

Prerequisite(s): MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 75 OR S12 FOR MIN. SCORE OF 610 OR A02 FOR MIN. SCORE OF 26

Credit Hours: 4.00. Introduction to image, manipulation and analysis. Biomedical materials to be analyzed include electrophoretic gels, bacterial agar plates, cells and tissues, x-ray films and CAT scan images. Personal computer systems and the basic programming skill of the C language also will be introduced. Typically offered Fall Spring Summer.

View Class Schedule

CS 40300 - Undergraduate Research In Computer Science

Credit hours: 1.00 - 3.00. This course provides students with the opportunity to work closely with faculty on a research project and gain experience with the process of research. Typically offered Fall Spring Summer.

View Class Schedule

CS 40400 - Distributed Systems

Prerequisite(s): CS 30200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A distributed system is two or more computers working together as a single unit. These systems are essential to the understanding of present and future computer applications. This course will include the following topics: concurrent processing, threads, network programming, distributed file systems, remote procedure calls, sockets, distributed objects, client-server models, and Internet protocols. Typically offered Spring.

View Class Schedule

CS 41000 - Automata And Computability

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 30900 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A finite automaton is a mathematical model for a computational system. Computer science embodies many examples of finite state systems. This course will cover the basic principles of deterministic and non-deterministic finite automata, Turing machines, formal language theory, regular expressions, context-free grammers, the halting problem, and unsolvability. Typically offered Fall.

View Class Schedule

CS 41600 - Software Engineering

Prerequisite(s): CS 30200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Software engineering is the study of the theory, methods, and tools which are needed to develop large, complex software systems. This course covers the specifications, design, documentation, implementation, and testing of software systems. Software life cycles, principles of project management, and case studies are covered. A group project will be assigned. Typically offered Spring.

View Class Schedule

CS 42000 - Senior Design Project

Credit Hours: 3.00. The objectives of this course is to provide students with concrete experience in writing advanced computer programs for practical application in science or industry. The student develops necessary software using appropriate techniques and prepares documentation for the use and support of the completed system. Typically offered Fall Spring Summer.
Experiential Learning (EL): Yes

View Class Schedule

CS 44200 - Database Systems

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A database is a system whose purpose is to organize, retrieve, and maintain large amounts of information. This course introduces the concepts and structures used in designing and implementing database systems. Topics include hierarchical network, relational, and object-oriented data models, database design principles, normalization, data dictionaries, query languages and processing. Typically offered Fall.

View Class Schedule

CS 45500 - Interactive Computer Graphics

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Computer graphics provides a mechanism for creating and manipulating images by means of a computer. This course covers two-dimensional curve drawing, view transformations, geometric modeling, projects, ray tracing, surface patch, three-dimensional object rendering, shading, and animation. Windows programming using OpenGL and MFC will also be introduced. Typically offered Fall.

View Class Schedule

CS 46200 - Introduction To Artificial Intelligence

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the fundamental concepts and techniques of artificial intelligence. The topics include intelligent agents and search algorithms (both uninformed and informed search), planning and decision making, supervised and unsupervised machine learning algorithms (e.g., KNN, decision trees, random forest, linear and logistic Regression, clustering, etc.), and applications of AI in NLP, robotics, computer vision, and other fields.

View Class Schedule

CS 48000 - The Practicum In Computer Science

Prerequisite(s): CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The purpose of this course is to provide students an opportunity to obtain experience in software design, development, and related activities in computer science. Students will work on a real problem obtained in conjunction with business industries or other organizations. Not more than two terms of CS 48000 may be taken for credit.

View Class Schedule

CS 49000 - Topics In Computer Sciences For Undergraduates

Credit Hours: 1.00 to 5.00. Supervised reading and reports in various fields. Permission of instructor required. Typically offered Fall Spring Summer.

View Class Schedule

CS 50100 - Computing For Science And Engineering

Credit Hours: 3.00. Credit in this course may not be used toward a graduate degree in Computer Sciences. Computational concepts, tools, and skills for computational science and engineering scripting for numerical computing, scripting for file processing, high performance computing, and software development. Project may be required. Typically offered Fall.

View Class Schedule

CS 51400 - Numerical Analysis

Prerequisite(s): CS 41400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (MA 51400) Iterative methods for solving nonlinear equations; linear difference equations, applications to solution of polynomial equations; differentiation and integration formulas; numerical solution of ordinary differential equations; roundoff error bounds. Typically offered Fall.

View Class Schedule

CS 51500 - Numerical Linear Algebra

Prerequisite(s): CS 31400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 35100 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 51100 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. Direct and iterative solvers of dense and sparse linear systems of equations, numerical schemes for handling symmetric algebraic eigenvalue problems, and the singular-value decomposition and its applications in linear least squares problems. Typically offered Spring.

View Class Schedule

CS 51510 - Algorithms

Credit Hours: 3.00. This course concentrates on the design of algorithms and the rigorous analysis of their efficiency. We will cover various algorithm design techniques such as divide and conquer, dynamic programming, greedy algorithms, and approximation algorithms; for each algorithm, we will perform complexity (worst case, average case) analysis. Typically offered Fall Spring Summer.

View Class Schedule

CS 51520 - Operating Systems

Prerequisite(s): CS 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is about the concepts and principles of modern operation systems. It includes: design and implementation of multi-process systems; process synchronization, mutual exclusion; CPU scheduling, deadlock, memory management, segmentation, paging, virtual memory; storage management, file system management, protection and security, evaluation and prediction of performance. Reading the latest paper about operation systems and presentations are required. Every student should participate in debates based on the case studies of Linux System and Windows 7. Prerequisites: CS 30200. Permission of department required. Typically offered Fall Spring Summer.

View Class Schedule

CS 51530 - Programming Languages, Interpreters And Compilers

Credit Hours: 3.00. This course provides the student with an overview of the issues that arise in the design and construction of translators for programming languages. The course emphasizes techniques that have direct application to the construction of compilers. Students are expected to develop a fundamental understanding of the issues that arise in program translation, including syntax analysis, translation, and rudimentary program optimization. Prerequisites: Graduate student standing. Undergraduate course work on high-level programming languages, and data structure. Permission of department required. Typically offered Fall Spring Summer.

View Class Schedule

CS 51540 - Object-Oriented Design, Analysis And Programming

Credit Hours: 3.00. This course is for students who already have programming experience. The course exposes students to the depth and breadth of modern programming practice, with the goal of making students better programmers. It provides a rigorous introduction to the advanced concepts behind object oriented programming such as encapsulation, information hiding, inheritance, dynamic binding and polymorphism. We discuss object-oriented design, design patterns and see how they can be implemented in different object-oriented programming languages. Java and C++ are used as the vehicle for illustrating and implementing these concepts. Permission of department required. Typically offered Fall Spring Summer.

View Class Schedule

CS 51550 - Database Systems

Credit Hours: 3.00. This course provides an introduction to modern database systems. It covers conceptual modeling and database design, formal database design theory, relational data model and SQL, query optimization, external hashing and indexing, and transaction processing, etc. In addition, this course provides fundamental

theory, and methodologies of Data Mining. Students will be asked to apply the data mining knowledge for real world problem solving. Prerequisites: Undergraduate studies in CS, particularly CS 44200 or its equivalent. Permission of department required. Typically offered Fall Spring Summer.

View Class Schedule

CS 51560 - Software Engineering

Prerequisite(s): CS 41600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Software engineering is the discipline concerned with the application of theory, knowledge, and practice for effectively and efficiently building software systems that satisfy the requirements of users and customers. This course provides an introduction to all phases of the life cycle of a software system, including requirement analysis and specification, UML modeling and design, implementation, testing, and operation and maintenance. The principles of project management, cost and effort estimation, scheduling, documentation, and quality assurance are also covered. A group project will be assigned. Each student will play one of the following roles: Project Manager (PM), Requirement Engineer (RE), Software Architect (SA), Integration Engineer (IE), Testing Engineer (TE), and User/Product Director (UPD). Every student will play the role of a Code Developer (CD) as well. Every student should also participate in the activities of the professional associations. The commercial and research prototype tools of IBM Rational Suite will be used. Some latest research papers about Software Engineering will be discussed. Typically offered Fall Spring Summer.

View Class Schedule

CS 51570 - Computer Architecture

Prerequisite(s): CS 22300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is the science and art of selecting and interconnecting hardware components to create computers that meet functional, performance and cost goals. It includes the following topics: Fundamentals of computer design, Instruction set principles and examples, Pipelining, Instruction-Level Parallelism and its dynamic exploitation, exploiting Instruction-Level Parallelism with software approaches, Memory hierarchy design, Parallel Processors and Cloud Computing. RISC, Intel 80x86, VAX, and IBM 360/370 are examples of the computer architecture for discussion. Reading and presenting the latest published papers related branch prediction and instruction-level parallelism are required. A project about designing branch prediction algorithms and evaluating the algorithms using SPEC benchmarks is also required. Typically offered Fall Spring Summer.

View Class Schedule

CS 51580 - Computer Graphics

Credit Hours: 3.00. An introduction to advanced computer graphics and the rendering of 3D computer graphics images. Topics include the concepts, principles, algorithms, and programming techniques in 3D interactive computer graphics. Emphasis is on the development and applications of 3D graphic algorithms and methods. Typically offered Fall Spring Summer.

View Class Schedule

CS 51590 - Parallel Computing

Credit Hours: 3.00. Parallel computing for science and engineering applications: parallel programming and performance evaluation, parallel libraries and problem-solving environments, models of parallel computing and run-time support systems, and selected applications. Typically offered Fall Spring Summer.

View Class Schedule

CS 52510 - Distributed Systems

Credit Hours: 3.00. This course consists of the discussion of special problems related to distributed control such as election and mutual exclusion, routing, data management, Byzantine agreement, and deadlock handling. The student will get exposed to fundamental issues in distributed system design, recent development, and even research trends in this area, as well as the hands-on experience of using Java sockets to program and implement a distributed system. Prerequisites: Undergraduate coursework in programming languages, operation systems, computer architecture, and algorithm design. Permission of department required. Typically offered Fall Spring Summer.

View Class Schedule

CS 52520 - Software Design I

Credit Hours: 3.00. This is a first course in Software Design, which is an internship-training course that the PNW Computer Science faculty conducts in cooperation with a local software industry partner, with students working on software development projects for the partner. Over the past few years the project has been run in conjunction with the Valparaiso, Indiana based software development company, BEULAHWORKS, LLC. This course introduces various topics related to software design including Object-Oriented Analysis & Design, Object-Oriented Design Principles, UML Diagrams, Architecture Design & Patterns and other topics. In addition, students will participate in developing software for software industry use. In particular, students will work in small teams to design and implement new features for a commercial software project. By the end of the course, students should gain practical experience with enterprise software design and implementation. The first half of the semester will be devoted to lectures regarding software design (assignments related to the lectures will also be given during this time). For the second half, students will be working on the project. The students who get a B or better grade will be able to take the second course of the sequence, Software Design II. Permission of instructor required. Typically offered Fall Spring.

View Class Schedule

CS 52530 - Software Design II

Credit Hours: 3.00. This is a second course in Software Design, which is an internship-training course that the PNW Computer Science faculty conducts in cooperation with a local software industry partner. It is based on Software Design I, and allows students to continue to work on software development projects for the partner. Over the past few years the project has been run in conjunction with the Valparaiso, Indiana based software development company, BEULAHWORKS, LLC. This course introduces various topics related to software design, including Object-Oriented Analysis & Design, Object-Oriented Design Principles, Design Patterns, Axiomatic Design and other topics. In addition, students will participate in developing software for software industry use. In particular, students will work in small teams to design and implement new features for a commercial software system. By the end of the course, students should gain practical experience with enterprise software design and implementation. The first half of the semester will be devoted to lectures regarding software design (assignments related to the lectures will also be given during this time). For the second half, students will be working on the project. Permission of instructor required. Typically offered Fall Spring.

View Class Schedule

CS 52540 - Data Mining, Machine Learning And Statistical Analysis

Prerequisite(s): CS 44200 FOR LEVEL UG WITH MIN. GRADE OF C AND STAT 40001 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course combines computer science algorithms and statistics analysis for data mining and machine learning. The course introduces rule-based decision tree systems, statistical learning, supervised and unsupervised learning, and multi-layer Neural Networks deep learning. Students will do modeling with C5, Neural Networks and R, and implement multiple algorithms in the programming languages C and Python. Typically offered Fall.

View Class Schedule

CS 59000 - Topics In Computer Sciences

Credit Hours: 1.00 to 5.00. Directed study for students who wish to undertake individual reading and study on approved topics. Permission of instructor required. Typically offered Fall Spring.

View Class Schedule

Construction Engineering Management Technology

CEMT 10300 - Introduction To Construction Management

Credit Hours: 3.00. This course will provide students with an introduction to the construction management discipline, and prepare students for the program curriculum. Additionally, this course will serve as a Freshman Experience course, and will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration, and critical thinking. Typically offered Fall.
General Education: First Year Experience

View Class Schedule

CEMT 11200 - Surveying Fundamentals

Prerequisite(s): MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 60 OR S12 FOR MIN. SCORE OF 560 OR A02 FOR MIN. SCORE OF 23

Credit Hours: 3.00. Introduction to basic surveying operations. Development of the surveying skills necessary to measure distances, angles, and elevations to required accuracies. Calculation of tape corrections, bearing, coordinates, traverses, and areas. Emphasis is placed on instrument use and note-keeping techniques. Typically offered Spring.

View Class Schedule

CEMT 11700 - Construction Graphics

Credit Hours: 3.00. Study of graphic solutions to problems conditioned by traditional and emerging construction document standards. Construction document creation is based on current architectural engineering and construction (AEC) standards with a focus on residential settings. Introductory 2D documentation will progress into 3D modeling techniques. Typically offered Spring.
General Education: Technology

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CEMT 16001 - Statics

Prerequisite(s): MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 60 OR S12 FOR MIN. SCORE OF 560 OR A02 FOR MIN. SCORE OF 23

Credit Hours: 3.00. Study of forces acting on bodies at rest. Coplanar and non-coplanar forces, concurrent and non-concurrent forces, hydrostatic forces, centroids and moments of inertia will be studies. Typically offered Spring.

View Class Schedule

CEMT 17000 - Materials And Systems Of Construction

Credit Hours: 3.00. An introduction to the nature of the construction industry and a survey of the most commonly used construction materials with special emphasis on their properties characteristics, limitations and applications

into different construction elements and systems such as foundations columns, trusses, arches, frames, etc. Guest speakers will discuss the nature and opportunities within the construction industry. Typically offered Fall.

View Class Schedule

CEMT 20900 - Land Surveying and Subdivision

Prerequisite(s): (CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 11200 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 25300 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 25300 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00 or 4.00. Theory and practice of land surveying, subdivision, filing and recording deeds, United States government survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles. Typically offered Spring.

View Class Schedule

CEMT 22200 - Architectural Construction

Prerequisite(s): CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building. Typically offered Fall.

View Class Schedule

CEMT 23000 - Mechanical And Electrical Systems

Prerequisite(s): CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A survey of systems for the supply and drainage of water, the heating and cooling of buildings, and the electrical power and lighting for buildings. Typically offered Fall.

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CEMT 25300 - Hydraulics And Drainage

Prerequisite(s): CEMT 16001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination. Typically offered Fall.

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CEMT 26001 - Strength Of Materials

Prerequisite(s): CEMT 16001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 11800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field structural design. Typically offered Fall.

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CEMT 26600 - Materials Testing

Prerequisite(s): CEMT 26001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests. Typically offered Spring.

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CEMT 27600 - Construction Specifications And Contracts

Prerequisite(s): CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 25000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 20800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Analyze the content and organization of specifications and how they relate to working drawings during construction. A study of the various types of contract documents used for construction. Typically offered Spring.

View Class Schedule

CEMT 28100 - Structural Calculations

Prerequisite(s): CEMT 26001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Analysis and design of steel structural members subjected to tension, compression, bending and combined stresses. Typically offered Spring.

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CEMT 29901 - Construction Engineering And Management Technology

Credit Hours: 1.00 to 3.00. Independent project or laboratory work is conducted under the supervision of appropriate CEMT faculty. Hours and subject matter must be arranged by instructor and approved by CEMT curriculum subcommittee. Permission of instructor required. Typically offered Fall Spring Summer.

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CEMT 30600 - Construction And Route Surveying

Prerequisite(s): CEMT 11200 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Application of surveying skills relevant to the construction field. Projects include; layout of commercial and industrial buildings, transfer of horizontal and vertical control, establishment of route centerlines, establishment of lines and grades, determination of earthwork quantities, establishing slope stakes, triangulation, topographic mapping, etc. Instruments used will include transits, theodolites, automatic levels, construction lasers, and EDMs. Typically offered Fall.

View Class Schedule

CEMT 30900 - Principles of Highway Construction

Credit Hours: 3.00. Basic principles of highway construction, including materials, methods, interpreting of plans and specifications, earthmoving, drainage, paving, bridges, and retaining walls. Typically offered Spring.

View Class Schedule

CEMT 31000 - Surveying Computations

Prerequisite(s): BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Analysis of errors in surveying measurements. Adjustments to surveying measurements, including an introduction to the least squares adjustment method. Computations using rectangular coordinates including intersections and coordinate transformations. Computations associated with horizontal and vertical control networks. Typically offered Fall Spring Summer.

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CEMT 32500 - Structural Applications

Prerequisite(s): CEMT 28100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 28000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections. Typically offered Fall.

View Class Schedule

CEMT 33100 - Properties And Behavior Of Soils

Prerequisite(s): CEMT 26600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways. Typically offered Fall.

View Class Schedule

CEMT 34000 - Fundamentals Of Construction Safety

Credit Hours: 3.00. (OLS 34000) Overview of construction safety and health regulations. Throughout the course students will participate in discussions pertaining to construction safety issues and will be provided information to evaluate the primary OSHA targeted hazards in the construction industry, OSHA 30 Hr. card. Students will learn to recognize key hazards, be exposed to control technologies and corrective actions for the prevention of an injury, illness, and fatality that commonly occurs at construction sites. (Not open to students with credit in OLS 34000). Typically offered Spring.

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CEMT 34101 - Construction Operations

Credit Hours: 3.00. Management, methods and equipment used in the construction of buildings, earthworks, bridges and roads. Contractor organization, job management, and safety. Excavation, formwork, concrete, masonry, and steel erection methods. Typically offered Fall.

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