

Courses Listed in Panthersoft

Course Offering			
CAP	4710	Prin Comp Graphics	3 units
A first course in algorithms/techniques for image generation devices, geometric transformations/matrices, algorithms for hidden surfaces, ray tracing, advanced rendering. Programming with standard graphics interface.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: COP3337, MAC2312.			
CAP	4770	Intro Data Mining	3 units
Data mining applications, data preparation, data reduction and various data mining techniques such as association, clustering, classification, anomaly detection.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: COP3530 Corequisite: COP4540			

Course Offering			
CDA	4101	Structure Comp Org	3 units
Covers the levels of organization in a computer: Design of memory, buses, ALU, CPU; design of microprogram. Covers virtual memory, I/O, multiple processes, CISC, RISC and parallel architectures.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: MAD2104, COP3402, COP3337.			
CDA	4400	Comp Hard Analysis	3 units
The study of hardware functions of a basic computer. Topics include logic elements, arithmetic logic units, control units, memory devices, organization and I/O devices.			
Course Component			
Class Lecture			

Required

Enrollment Requirement Group
Prerequisite: CDA4101

Course Offering

CEN 2300 Windows Nt Administ 3 units

A two-part course covering introduction to Networking and the Windows NT Operating System. This course will cover material that is covered on the Microsoft Certified systems Engineer (MCSE) exam.

Course Component
Class Lecture

Required

Enrollment Requirement Group
Prerequisite: (CGS2060 or CGS2100)

CEN 4010 Software Eng I 3 units

Software Process Model, software analysis and specification, software design, testing.

Course Component
Class Lecture

Required

Enrollment Requirement Group
Prerequisite: COP3530.

CEN 4015 Software Project 3 units

Students design, implement, document, and test software systems working in faculty supervised project teams and utilizing knowledge obtained in previous courses. Required for Software Design and Development track.

Course Component
Class Lecture

Required

Enrollment Requirement Group
Prerequisite: CEN4010

CEN 4021 Software Eng II 3 units

Issues underlying the successful development of large scale software projects: Software Architectures; Software Planning and Management; Team Structures; Cost Estimation.

Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: CEN4010.			
CEN	4023	Compon Software Dev	3 units
Concept of software components, component models and web services such as WSDL and SOAP.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisites: (COP4338 or COP4005 or permission of the instructor)			

Course Offering			
CGS	1920	Intro to Computing	1 units
Overview of the computing field to students, research programs and career options.			
Course Component			
Class Lecture			
Required			
CGS	2060	Intro To Micro Comp	3 units
A hands-on study of microcomputer software packages for applications such as operating system, word processing, spreadsheets, and database management. For students without a technical background. Not acceptable for credit for Computer Science majors.			
Course Component			
Class Lecture			
Required			
CGS	2100	Comp Appls Business	3 units
A hands-on study of spreadsheet and database management package for business students without a technical background. Not acceptable for credit for Computer Science majors.			
Course Component			
Class Lecture			
Required			
CGS	2423	C For Engineers	3 units

A first course in programming geared for engineering and natural science students that describes the syntax and semantics of ANSI C programming language. Includes developing algorithms and writing for problems in engineering and science.

Course Component

Class Lecture

Required

CGS 2518 Computr Data Analys 3 units

A hands-on study of how to use a modern spreadsheet program to analyze data, including how to perform queries, summarize data, and solve equations. For non-technical students. Not acceptable for CS students.

Course Component

Class Lecture

Required

CGS 3092 Ethics/Soc In Cs 1 units

Ethical, legal, social issues and the responsibility of computer professionals. Codes of conduct, risks and reliability, responsibility, liability, privacy, security, free speech issues.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP2210 or 2250)

CGS 3260 Micro Org 3 units

A study of the hardware components of modern microcomputers and their organization. Evaluation and comparison of the various microcomputer systems. Not acceptable for credit for Computer Science Majors. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP2250 or COP2210)

CGS 3300 Intro Info Systems 3 units

Survey major information systems (I.S.) problems in organizations. Brief study of basic computer concepts; I.S. development cycle; relation of I.S. and decision-making; microcomputer database, spreadsheet and word-processing business applications.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (CGS2060"D-" or CGS2100"D-" or equivalent or XBUSN10MIN).

CGS 3425 Web Programming 3 units

A programming course in Java with emphasis on web-based applications: Applets; Components; Servlets; Java Beans. Not acceptable for credit for Computer Science majors.

Course Component

Class Lecture

Required

CGS 3559 Using The Internet 1 units

Internet history and importance. What is available on the Net. Tools such as email, listserves, telnet, ftp, Archie, Veronica, Gopher, netfind, the World Wide Web, Wais, and Mosaic. Nontechnical.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisites: (CGS2060 or CGS2100)

CGS 3760 Computer Os 3 units

Introduction to fundamental concepts of operating systems and their implementation in UNIX, Windows NT and Windows 95/98. Not acceptable for credit for Computer Science majors. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP2250 or COP2210)

CGS 4283 Appl Networking 3 units

Principles of computer network design, operation and management. Network protocols. Network configuration. Network security. Not acceptable for credit for Computer Science majors.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: CGS3760

CGS	4365	Knowledge Based Syst	3 units
Introduction to knowledge-based and expert systems. Knowledge acquisition, knowledge representation, and creation of expert system. Not acceptable for credit for Computer Science majors. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
CGS	4366	Info Retrieval	3 units
Introduction to information management and retrieval concepts. The design and implementation of a relational database using a commercial DBMS. Online information retrieval and manipulation. Not acceptable for credit for Computer Science majors. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: COP3804			
CGS	4825	Websiteconmgmt	3 units
The fundamentals of creating and maintaining a website. Installation and maintenance of a web-server. Techniques for building multimedia interactive web-pages. Not acceptable for credit for Computer Science majors.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisites: (COP3804 or 3337), and CGS3559			

Course Offering

CIS	3900	Independent Study	1 units min / 5 units max
Individual conferences, assigned readings, and reports on independent investigations.			
Course Component			
Directed Individual Study			
Required			
CIS	3930	Special Topics	1 units min / 5 units max
A course designed to give groups of students an opportunity to pursue special studies not			

otherwise offered.			
Course Component Other			
Required			
CIS	4363	Computer Security	3 units
Technical study of issues and solutions for computer and network security and privacy. The security problem, encryption and decryption, public key encryption, authentication, operating system security, program security.			
Course Component Class Lecture			
Required			
Enrollment Requirement Group Prerequisites: CDA4101,COP3337			
CIS	4911	Senior Project	3 units
Students work on faculty supervised projects in teams of up to 5 members to design and implement solutions to problems utilizing knowledge obtained across the spectrum of Computer Science courses.			
Course Component Supervised Research			
Required			
CIS	4930	Special Topics	1 units min / 3 units max
A course designed to give groups of students an opportunity to pursue special studies not otherwise offered.			
Course Component Other			
Required			

Course Offering			
CNT	4513	Data Communications	3 units
Study Computer network models and protocol layers. Topics include: error handling, frames, broadcast networks, channel allocation; network routing algorithms, internetworking, TCP/IP, ATM protocols.			
Course Component Class Lecture			
Required			
Enrollment Requirement Group Prerequisites: CDA4101 or (COP3804 and CGS4283			

Course Offering			
COM	3110	Bus And Prof Commun	3 units
Course Component			
Class Lecture			
Required			

Course Offering			
COP	2210	Programming I	4 units
A first course in computer science that uses a structured programming language to study programming and problem solving on the computer. Includes the design, construction and analysis of programs. Student participation in a closed instructional lab is required. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
COP	2250	Java Programming	3 units
A first course in programming for IT majors. Syntax and semantics of Java. Classes and Objects. Object oriented program development. Not acceptable for credit for Computer Science majors. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
COP	3175	Visual Basic	3 units
An introduction to Visual Basic programming with emphasis on Business Applications. Not acceptable for credit for Computer Science majors. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
COP	3337	Programming II	3 units
An intermediate level course in Object Oriented programming. Topics include primitive types, control structures, strings arrays, objects and classes, data abstraction inheritance			

polymorphism and an introduction to data structures. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Corequisite: MAD2104. Prerequisite: COP2210.

COP	3344	Intro Unix/Linux	3 units
-----	------	------------------	---------

Techniques of Unix/Linux systems. Basic use, file system structure, process system structure, unix tools (regular expressions, grep, find), simple and complex shell scripts, Xwindows. Not acceptable for credit for Computer Science majors. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP2210 or COP2250 or equivalent)

COP	3402	Fund Computer System	3 units
-----	------	----------------------	---------

Overview of computer systems organization. Data representation. Machine and assembly language programming. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: COP2210.

COP	3465	Data Structures It	3 units
-----	------	--------------------	---------

Basic concepts of running time of a program, data structures including lists, stacks, queues, binary search trees, and hash tables, and internal sorting. Not acceptable for credit for CS majors. This course will have additional fees.

Course Component

Class Lecture

Required

COP	3530	Data Structures	3 units
-----	------	-----------------	---------

Basic concepts of data organization, running time of a program, abstract types, data structures including linked lists, nary trees, sets and graphs, internal sorting. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: MAD2104, COP3337.

COP 3804 Intermediate Java 3 units

A second course in Java programming. Continues Programming in Java by discussing object-oriented programming in a more detail, with larger programming projects and emphasis on inheritance. Not acceptable for credit for CS majors. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: COP2250.

COP 3832 Adv Web Server Comm 3 units

Maintain a web server on the Internet. Learn HTML, PERL, Javascript. Configure the Apache web server. Write interactive server scripts. Discuss Web security & ASP. Use Java applets and ActiveX controls. This course will have additional fees.

Course Component

Class Lecture

Required

COP 3835 Designing Web Pages 3 units

Designing basic pages for display on the World Wide Web. Fundamental design elements and contemporary design tools are discussed.

Course Component

Class Lecture

Required

COP 3949 Coop Computer Sci 1 units min / 3
units max

One semester of full-time work, or equivalent, in an outside organization, limited to students admitted to the CO-OP program. A written report and supervisor evaluation is required of each student.

Course Component

Other

Required

Enrollment Requirement Group

Prerequisite: MAC2312, COP3337.

COP 4005 Win Programming - It 3 units

Application development techniques in Windows: Visual Basic Classes, Objects, Controls, Forms and Dialogs, Database, Active X and Internet Programming and Enterprise Application Architecture. Not acceptable for credit for CS Majors. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP3804 or COP3337)

COP 4009 Win Components Tech 3 units

Component-Based and Distributed Programming Techniques: C#, Common Type System, Windows and Web Forms, Multithreading, Distributed Objects. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: (COP4226 or COP4005)

COP 4225 Advanced Unix Prog 3 units

Unix overview: files and directories, shell programming. Unix tools: sed, grep, and others. Unix internals: file systems, process structure. Using the system call interface. Interprocess communication. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: COP4338. Corequisite: COP4610.

COP 4226 Adv Windows Prog 3 units

Advanced Windows Programming topics including Object Linking and Embedding (OLE), Open Database Connectivity (ODBC), Memory Management Techniques, Dynamic Link Libraries, Multithreaded Programming and Client/Server Applications. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group
Prerequisite: COP3337

COP 4338 Programming III 3 units

Topics include Object-Oriented programming Concepts and Modern Programming Techniques. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group
Prerequisite: COP3530.

COP 4343 Unix Sys Admin 3 units

Techniques of Unix system administration: system configuration and management; user setup, management and accounting; software installation and configuration; network setup, configuration and management.

Course Component

Class Lecture

Required

Enrollment Requirement Group
Prerequisite: COP3344

COP 4540 Database Management 3 units

Logical aspects of databases including Relational, Entity-Relationship, and Object-Oriented data models, database design, SQL, relational algebra, tuple calculus, domain calculus, and physical database organization. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group
Prerequisite: COP3530.

COP 4555 Prin Of Prog Lang 3 units

A comparative study of several programming languages and paradigms. Emphasis is given to design, evaluation and implementation. Programs are written in a few of the languages. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: COP3530

COP 4610 Operating Syst Princ 3 units

Operating systems design principles and implementation techniques. Address spaces, system call interface, process/threads, interprocess communication, deadlock, scheduling, memory, virtual memory, I/O, file systems. This course will have additional fees.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: CDA4101, COP4338.

COP 4722 Survey Database Sys 3 units

Design and management of enterprise systems; concurrency techniques; distributed, object-oriented, spatial, and multimedia databases; databases integration; datawarehousing and datamining; OLAP; XML interchange.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: COP4540

COP 4723 Database Admin 3 units

Client-server architecture; planning, installation, server configuration; user management; performance optimization; backup, restoration; security configuration; replication management; administrative tasks.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: CGS4366

COP 4813 Web Applicatn Prog 3 units

Creating Web applications with user interfaces, databases, state management, user authentication, error handling, and web services.

Course Component

Class Lecture

Required

Enrollment Requirement Group

Prerequisite: CGS4825 and COP4005

COP	4906	Research In Cs	1 units min / 3 units max
Participation in ongoing research in the research centers of the school. Prerequisite: Permission of the instructor.			
Course Component			
Class Lecture			
Required			
COP	4949	Coop Computer Sci	1 units min / 3 units max
One semester of full-time work, or equivalent, in an outside organization, limited to students admitted to the CO-OP program. A written report and supervisor evaluation is required of each student.			
Course Component			
Other			
Required			
Enrollment Requirement Group			
Prerequisite: MAC2312, STA3033, COP3337.			

Course Offering

COT	3420	Logic For Comp Sci	3 units
An introduction to the logical concepts and computational aspects of propositional and predicate logic, as well as to concepts and techniques underlying logic programming, in particular, the computer language Prolog. This course will have additional fees.			
Course Component			
Class Lecture			
Required			
Enrollment Requirement Group			
Prerequisite: COP3337, MAD2104.			