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IGETC 2016-2017

AREA 1 – ENGLISH COMMUNICATION

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
A	ENGL 001A	READING & COMPOSITION	1	1	1
B	ENGLISH 001C	INTERM COMPOSITION	1	1	1
C	SPEECH 010	INTERPERSONAL COMMUN	1	1	1

AREA 2 – ARTS AND HUMANITIES

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
	MATH 131	INTERMEDIATE ALGEBRA			
	MATH 139	PLANE GEOMETRY			
A	MATH 007A	MATH ANALYSIS I	1	Fall 2019	
	MATH 007B	MATH ANALYSIS II	…		
	MATH 005A	SINGLE VAR CALCULUS I	…		
	MATH 005B	SINGLE VAR CALCULUS II	…		
UCLA	MATH 005C	MULTIVARIABLE CALCULUS	…		
UCLA	MATH 010	LINEAR ALBEGRA & APP	…		
UCLA	MATH 055	DIFFERENTIAL EQUATIONS	…		
UCLA	MATH 022	DISCRETE MATHEMATICS	…		

AREA 3 – ARTS AND HUMANITIES

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
ARTS	ARCH 024A	HISTORY OF ARCHIT	1	1	1
ARTS	ARCH 024B	HISTORY OF ARCHIT	1	1	1
HUM	REL 003	COMPARATIVE RELIGIONS	1	1	1

AREA 4 – SOCIAL AND BEHAVIORAL SCIENCES

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
A	HIST 001A	US HISTORY TO 1876	1	1	1
B	POLS 001	INTRO TO US GOVERN	1	1	1
B	POLS 022	INTRO TO POL THEORY	1	1	1

AREA 5 – PHYSICAL AND BIOLOGICAL SCIENCES

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
A	GEOG 004	WEATHER & CLIMATE	1	1	1
B	BIO 030	FIELD BOTANY	1	1	1
C	BIO 004	PLANT BIOLOGY	1	1	1
UCLA	PHYS 001A	GENERAL PHYSICS	…		
UCLA	PHYS 001B	GENERAL PHYSICS	…		
UCLA	PHYS 001C	GENERAL PHYSICS	…		

AREA 6 – LANGUAGE OTHER THAN ENGLISH (UC ONLY)

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
	FREN 001	BEGINNERS FRENCH	1	TRANSFER HS	1
	FREN 002	INTERM FRENCH	1	TRANSFER HS	1

AREA 7 – US HISTORY, CONSTITUTION AND AMERICAN EDEALS (CSU ONLY)

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
A	POLS 001	INTRO TO US GOVERN	1	1	1
B	HIST 007A	US HISTORY TO 1876	1	1	1

MAJOR STUDIES

Computer Science to UCLA – Prerequisite MATH 7B

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
UCLA	CS 002 (C++)	FUNDAMENTALS OF CS I	…		
UCLA	CS 003 (C++)	FUNDAMENTALS OF CS II	…		
UCLA	CS 006	INTRO TO APPLIED DESIGN	…		
UCLA	CS 008 (C++)	FUNDAMENTALS OF CS III	…		
UCLA	CS 003B (JAVA)	FUNDAMENTALS OF CS II			

CERTIFICATION – CIS PROGRAMMING 2018 - 2019

GROUP	COURSE	NAME	NEED	IN PROGRESS	COMPLETED
REQ	CIS 012	INTRO TO PROGRAMMING	1	1	1
REQ	CIS 014	C++ PROGRAMMING	1	Spring 2019	
REQ	CIS 016	JAVA PROGRAMMING		Fall 2019	
REQ	CIS 036	INTRO TO VISUAL BASIC	1	1	1
ELEC	CIS 010	INTRO TO INFORM SYS	1	1	1
ELEC	CIS 199	WEB DEVL USING ROR	1	Winter 2019	

CERTIFICATION – CIS PROGRAMMING 2016-2017 - Outdated

REQ	CIS 010	INTRO TO INFORM SYS	1	1	1
REQ	CIS 012	INTRO TO PROGRAMMING	1	1	1
~~REQ~~	~~CIS 062~~	~~INTRO TO SYS ANALYSIS~~	1		
REQ	CIS 014	C++ PROGRAMMING	1	Spring 2019	
ELECT	CIS 036	INTRO TO VISUAL BASIC	1	1	1
ELECT	CIS 016	JAVA PROGRAMMING	1	Fall 2019	
~~REQ~~	~~CIS 038~~	~~ADVANCED VISUAL BASIC~~	1		
REQ	CIS 020	INDEPENDENT STUDY	1		

MAJOR – POLITICAL SCIENCE (ASSOCIATES IN ARTS)

REQ	POLS 001	INTRO TO USA GOV	1	1	1
LIST A	POLS 022	INTRO TO POL THEORY	1	1	1
LIST A	STAT 018	STAT FOR BEH & SOC SCI	1	Fall 2019	
LIST A	POLS 006	THE US AND WORLD POL	1	Spring 2019	
LIST B	ECON 001A	PRINC. OF ECONOMICS	1		
LIST B	POLS 021	INTRO TO POL ECONOMY	1		

CERT BIOLOGICAL TECHNOLOGY – COMPUTATIONAL BIOLOGY – 2016-2017

	CIS 010	INTRO TO INFORM SYS	1	1	1
	BIOL 039	MDRN HUMAN GENETICS	1	Spring 2019	
	CIS 036	INTRO TO VISUAL BASIC	1	1	1
MTH131	STAT 018 OR 50	STAS FOR BEHAV SOC SCI	1	Fall 2019	
	BIOL 028	INTR TO BIOINFORMATICS	1		

Completed Classes

Fall 2016

CIS 010
INTRODUCTION TO INFORMATION SYSTEMS
3 units
Foundation course including hardware, system and application software, networking, programming languages, systems analysis and design, information systems and usage of the Internet, the web, and E-Commerce. Hands-on experience with programming, webpage design, spreadsheets, database and Internet software. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU: UC

Spring 2017

ENGL 001A
READING AND COMPOSITION
4 units
Prerequisite: One of the following: (1) Engl 100; (2) ESL 033B; (3) placement based on the English assessment process.
Recommended Preparation: Engl 014. Course Descriptions Development of expository and argumentative essays. Instruction in writing annotated papers. Analysis of various forms of writing with emphasis on expository and argumentative essays. No credit if taken after Engl 001AH or 001AS. Total of 72 hours lecture. Transfer Credit: CSU; UC. *C-ID: ENGL 100

POLS 001
INTRODUCTION TO AMERICAN GOVERNMENT AND POLITICS
3 units
Introduction to American government and politics incorporating California state and local history, constitution, institutions and policies. Pols 001 and 002 usually required for advanced political science courses. No credit if taken after AmerI 005. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID:

Summer 2017

HIST 007A
UNITED STATES HISTORY TO 1876
3 units
Chronological, thematic, and analytical study of the political, economic, social, cultural, and diplomatic history of the United States to Reconstruction. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: HIST 130

Fall 2017

POLS 022

INTRODUCTION TO POLITICAL THEORY

3 units

Introductory exploration of the nature and role of major political theories from ancient times to the present; central questions of political life, views of human nature, political organizations, power, justice, and revolutions. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: POLS 120

BIOL 004

PLANT BIOLOGY

4 units

Basic botanical principles; plant evolution and diversity, the cell, photosynthesis, respiration, reproduction, heredity, ecology, and importance of plants to humans. Total of 54 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor.

ARCH 024A

HISTORY OF ARCHITECTURE

3 units

Development of architecture from Prehistory, through ancient Egypt, ancient Greece and ancient Rome to the end of the Medieval period. Development of ancient, traditional or indigenous architecture of India, Islam, China, Japan, Africa, and the Americas. Influence of geography, religion and socio-economic factors on architecture. Total of 54 hours lecture. Transfer Credit: CSU; UC

ENGL 001C

INTERMEDIATE COMPOSITION — CRITICAL THINKING AND ARGUMENT

4 units

Prerequisite: Engl 001A, 001AH, or 001AS.

Principles of critical thinking applied to writing and reading on complex issues which incorporate logic, reasoning, persuasion, analysis and evaluation of appropriate prose models, including those employing argument, other rhetorical modes, and critical thinking strategies specific to various modes of thought; selective use of citation and documentation. No credit if taken after Engl 001CH. Total of 72 hours lecture. Transfer credit: CSU; UC. *C-ID: ENGL 105

Spring 2018

ARCH 024B

HISTORY OF ARCHITECTURE

3 units

Basis and development of modern architecture from the Renaissance to the present day. Influence of technological, ecological, environmental, and socio-economic factors on architecture. Trends in

contemporary architecture and environmental design. Total of 54 hours lecture. Transfer Credit: CSU; UC

KINA 036
AEROBIC FITNESS
1 unit
An introduction to the basic principles and techniques of cardiovascular fitness by using a combination of rhythmic movement and low impact aerobics. Students will also work to improve their muscular strength and tone through the use of calisthenics and/or hand weight circuits. Proper nutrition and a healthy diet for peak performance are emphasized. Total of 54 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor.

NUTR 011
HUMAN NUTRITION
3 units
Nutrition from birth through old age. Relationship of diet to physical activity and body functions. Caloric foods, minerals and vitamins. Total of 54 hours lecture and 18 hours laboratory. Transfer Credit: CSU; UC. *C-ID: NUTR 110

RELG 003
COMPARATIVE RELIGIONS: NEAR EAST
3 units
Cultural history and doctrinal interpretations of living religions of Near East: Zoroastrianism, Islam, Judaism and Christianity. Summary contrasts and comparisons with emphasis on present-day religious issues and their relationship to social and political problems. Total of 54 hours lecture. Transfer Credit: CSU; UC

SPCH 010
INTERPERSONAL COMMUNICATION
3 units
Principles and practices in communication and communication theories. Intrapersonal, interpersonal and small group communication. Non-verbal communication, perception-information processing, attitude change and semantics. Recommended proficiency in spoken English. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: COMM 130

Fall 2018

BIOL 030
FIELD BOTANY
4 units
Collection, identification and classification of native California flowering plants. Field identification of trees, shrubs and wildflowers common in California plant communities. Required instructional trips.

Total of 54 hours lecture and 54 hours by arrangement. This course may be scheduled using the “To Be Arranged” (TBA) scheduling format. Transfer Credit: CSU

CIS 012
INTRODUCTION TO PROGRAMMING
3 units
Prerequisite: Enrollment in or completion of CIS 010. Foundation course in programming for students with little or no programming knowledge or experience. Topics will cover the building blocks of a program, life cycle of a program, user-developer relationships, design interface features, instruction components, and basic coding elements. Total of 36 lecture hours and 54 hours of laboratory. Transfer Credit: CSU; UC

CIS 036
INTRODUCTION TO VISUAL BASIC
3 units
Prerequisite: CIS 010. Recommended Preparation: CIS 012. Introduction to programming using Visual Basic. Course will cover guidelines to build a simple application; and how to create a graphical user interface (GUI) design utilizing various design tools. Fundamentals will be presented on basic coding elements, data fle manipulation, use of variables, constants, selection and branching structures, looping, data validation, sub and function procedures, string manipulation, and creating and accessing arrays. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC

GEOG 004
WEATHER AND CLIMATE
3 units
Introduction to weather and climate, the science of weather, weather forecasting and interpretation of meteorological information available over the internet. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: GEOG 130

Winter 2018

CIS 199
DEVELOPMENT USING RUBY ON RAILS
3 units
Prerequisite: CIS 012.
Introduction to Web Applications Development using the Ruby on Rails framework. Topics include Ruby fundamentals, Rails basics, Rails installation, Model-View Controller (MVC) architecture, Active Record, Controllers, Views, test-driven development, application security, and deployment and scaling. Total of 36 hours lecture and 54 hours laboratory

Spring 2019

ART 061

CREATIVE CODING FOR MOBILE DEVICES

3 units

Exploration of the creative potential of computer programming for mobile devices using Apple's Swift programming language. Teaches the use and cultural implications of code in the context of art and design. Fundamentals of programming (variables, conditionals, iteration, functions, and objects). Covers touch-based interfaces, generative drawing, image processing, 3D graphics, data parsing, computer vision in a variety of art and design-oriented projects, media outputs and fabrications. Geared toward students who would like to explore computer programming in an art and design context. Total of 36 hours lecture and 72 hours laboratory. Transfer Credit: CSU

POLS 006

THE U.S. AND WORLD POLITICS

3 units

Introduction to various aspects of World Politics including the role of major political, social, economic, and defense institutions in countries. The model is American policy and relationship to global and bilateral institutions. Total of 54 hours lecture.
Transfer Credit: CSU; UC
Grade Mode: L, P

BIOL 039

MODERN HUMAN GENETICS

4 units

An introductory course exploring the theoretical and practical applications of human heredity, genetics and biotechnology. Introduction to cellular and molecular biology, Mendelian and molecular genetics, evolution, human genetics, applications of genetic engineering including biotechnology, forensics and molecular medicine. Total of 54 hours lecture and 54 hours laboratory.
Transfer Credit: CSU, UC
Grade Mode: L, A, P

CIS 014 *(CS 003A + CS 003B)*

C++ PROGRAMMING

3 units

Prerequisites: CIS 012. Foundations of C and C++. Operators, functions, arrays, pointers, structures, unions, classes, C++ data types, polymorphism, inheritance, encapsulation, virtual functions, templates, file processing, control structures, and an emphasis on object-oriented program design. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L, P

Courses

ANTRHOPOLOGY

(Social Sciences Division)

ANTH 002
CULTURAL ANTHROPOLOGY
3 units
Origin, development and extensiveness of socio-economic groups such as tribe, clan and family; religious phenomena such as ritual, belief and worship; language phenomena and thought processes. No credit if taken after ANTH 002H. Total of 54 hours lecture.
Transfer Credit: CSU; UC. C-ID: ANTH 120

ARCHITECTURE

ARCH 024A
HISTORY OF ARCHITECTURE
3 units
Development of architecture from Prehistory, through ancient Egypt, ancient Greece and ancient Rome to the end of the Medieval period. Development of ancient, traditional or indigenous architecture of India, Islam, China, Japan, Africa, and the Americas. Influence of geography, religion and socio-economic factors on architecture. Total of 54 hours lecture. Transfer Credit: CSU; UC

ARCH 024B
HISTORY OF ARCHITECTURE
3 units
Basis and development of modern architecture from the Renaissance to the present day. Influence of technological, ecological, environmental, and socioeconomic factors on architecture. Trends in contemporary architecture and environmental design. Total of 54 hours lecture. Transfer Credit: CSU; UC

ART

(Visual Arts and Media Studies Division)

ART 059
CREATIVE CODING FOR THE INTERNET
3 units
Exploration of the creative potential of computer programming for the Internet using JavaScript, its use, and cultural implications in the context of art and design. Fundamentals of programming (variables, conditionals, iteration, functions, and objects). Covers generative drawing, 3D graphics, sound, and virtual reality in a variety of design projects specifically for web-based and mobile output. Geared toward students who would like to explore computer programming in an art and design context. Total of 36 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit under review. Grade Mode: L

ART 061
CREATIVE CODING FOR MOBILE DEVICES
3 units
Exploration of the creative potential of computer programming for mobile devices using Apple's Swift programming language. Teaches the use and cultural implications of code in the context of art and design. Fundamentals of programming (variables, conditionals, iteration, functions, and objects). Covers touch-based interfaces, generative drawing, image processing, 3D graphics, data parsing, computer vision in a variety of art and design-oriented projects, media outputs and fabrications. Geared toward students who would like to explore computer programming in an art and design context. Total of 36 hours lecture and 72 hours laboratory. Transfer Credit: CSU

ART 063
USER EXPERIENCE DESIGN (UX)
3.5 units
Focuses on the quality of experience a person has when interacting with a specific design. A UX Designer focuses on the needs and wants of the user, as well as ease-of use, and designs for the best possible user experience. Covers the design process, documentation, and tools used within the UX filed. Topics include user research, information architecture, interaction design, prototyping, and usability testing. Following a design process, students will collaborate to research, critique, and design a project that includes prototyping and user-testing. Total of 54 hours lecture and 36 hours laboratory. Transfer Credit: CSU

ART 080
FOUNDATIONS OF INTERACTIVE GAME DESIGN
3 units
Surveys history, technology, narrative, ethics, and design of interactive computer games. Work in teams to develop novel game-design story boards. Exploration of the interplay of narrative, graphics, rule systems, and artificial intelligence in the creation of interactive games. Total of 54 hours lecture and 36 hours laboratory. Transfer Credit: CSU

ART 081
GAME DESIGN WITH GAME ENGINES
3 units
Prerequisites: ART 080 or portfolio of intermediate computer skills with experience in computer graphics or digital video or music. Provides students with intermediate skills in video game design and development using a 2D and 3D game engine. Students create projects for 2D, 3D and in virtual reality. Utilizing a design sequence that involves brainstorming techniques, team work, game design documents, prototyping and playtesting, students develop a knowledge of project management for an efficient and effective game design workflow. Topics include game rules, balance, complexity, randomness, narrative, player interaction, aesthetics and world building. Course includes basic scripting skills for game

development. Course instruction utilizes workshops, lectures, class presentations and readings. Total of 36 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit under review.

BIOLOGY

(Natural Sciences Division)

BIOL 004
PLANT BIOLOGY
4 units
Basic botanical principles; plant evolution and diversity, the cell, photosynthesis, respiration, reproduction, heredity, ecology, and importance of plants to humans. Total of 54 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor.

BIOL 005C
TOPICS IN APPLIED BIOLOGY - MEDICINAL PLANTS
1 unit
Lecture, laboratory and field investigations focusing on topics of current and general interest in applied botany. Total of 9 hours of lecture and 27 hours of laboratory. Transfer Credit: CSU

BIOL 010A
CELLULAR BIOLOGY, GENETICS AND EVOLUTION
5 units
Prerequisite: Chem 001A.
Investigates the principles governing cell biology, metabolism, genetics, evolution and history of life on earth. The first course in a 3-course sequence for Biology majors (Biol 010ABC). For majors in biological sciences but open to all qualified students. Total of 54 hours lecture and 108 hours laboratory. Transfer Credit: CSU; UC. *C-ID: BIOL 190; BIOL SEQ 130S (WITH BIOL 010B)

BIOL 010C
GENETICS
3 units
Prerequisites: Chem 001A and Biol 010A.
Explores the details of genetics, genomic analysis, DNA technology, bioinformatics, stem cell biology, and cancer. The third course in the sequence for Biology majors (Biol 10ABC). Total of 54 hours lecture. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: BIOL 130S

BIOL 030
FIELD BOTANY
4 units
Collection, identification and classification of native California flowering plants. Field identification of trees, shrubs and wildflowers common in California plant communities. Required instructional trips. Total of 54 hours lecture and 54 hours by arrangement. This course may be scheduled using the “To Be Arranged” (TBA) scheduling format. Transfer Credit: CSU Grade Mode: L, A, P

BIOL 028
INTRODUCTION TO BIOINFORMATICS
3 units
Introduction to the structure and function of proteins and nucleic acids including molecular modeling, sequence alignment, database management. Computer programming with Perl or comparable programming language. Designing and managing biological database using relational database applications. Data gathering and analysis using spreadsheet applications. Recommended basic computer skills. Total of 54 hours lecture and 36 hours laboratory.
Transfer Credit: CSU

BIOL 039
MODERN HUMAN GENETICS
4 units
An introductory course exploring the theoretical and practical applications of human heredity, genetics and biotechnology. Introduction to cellular and molecular biology, Mendelian and molecular genetics, evolution, human genetics, applications of genetic engineering including biotechnology, forensics and molecular medicine. Total of 54 hours lecture and 54 hours laboratory.
Transfer Credit: CSU, UC
Grade Mode: L, A, P

BUILDING CONSTRUCTION

(Engineering and Technology Division)

BLDG 122
CONTRACTOR'S LICENSING
3 units
Rules and regulations of State Contractor's License Board; legal aspects of business. Total of 54 hours lecture.

CHEMISTRY

(Natural Sciences Division)

CHEM 001A
GENERAL CHEMISTRY AND CHEMICAL ANALYSIS
5 units
Prerequisites: (1)Math 131 or its equivalent, and (2) Chem 022 or equivalent skills as demonstrated through placement based on the chemistry assessment process.
Standard general chemistry for science and engineering majors, with emphasis on quantitative methods and calculations. Atomic structure and chemical bonding, stoichiometry, gases, liquids, solids and solution chemistry. Introductions to equilibrium and organic chemistry. Quantitative analysis using analytical balances, gravimetric and volumetric procedures, spectrophotometry and calorimetry. Total of 54 hours lecture and 108 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. *CD-ID: CHEM 110; CHEM SEQ 120S (with CHEM 001B)

CHEM 002A*
CHEMISTRY — GENERAL, ORGANIC AND BIOCHEMISTRY
4 units
Prerequisite: Math 125 or Math 127B or Math 128B or Math 150.
Principles of chemistry for health science majors. Atomic and molecular structure, chemical bonding, nomenclature, chemical reactions and stoichiometry, gases, solutions, acids and bases, pH, buffers, nuclear and organic chemistry. No credit if taken after Chem 001A. Total of 54 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: CHEM 101

CHEM 022
CHEMISTRY - INTRODUCTORY CHEMISTRY
4 Units
Prerequisite: Enrollment in or completion of Math 131 or equivalent.
Introduction to the principles of chemistry with emphasis on quantitative methods and calculations. For science and engineering majors needing preparation for Chem 001A, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC credit limitations. See counselor.

COMPUTER SCIENCE

(Mathematics Division)

CS 001
INTRODUCTION TO COMPUTERS AND PROGRAMMING
5 units
The history of computing, basic computer operation, the notion of an algorithm, variable definitions, expressions, input/output, branches, loops, functions, parameters, selection, iterative techniques, arrays, strings. For non-engineering and non-science majors or for students considering taking CS 002 but needing additional preparation. No credit if taken after CS 002. Total of 72 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC

CS 002
FUNDAMENTALS OF COMPUTER SCIENCE I
4 units
Prerequisite: Math 007B or 009.
First programming course in the series of Introduction to Computer Science courses. Problem solving through structured programming of algorithms on computers using the basics of the C++ object-oriented language. Includes variables, expressions, input/output (I/O), branches, looping constructs, functions, argument passing, single and double dimensional arrays, strings, file I/O, C++ vectors, software design principles, testing, and debugging techniques. Students will be required to develop at least one computer program in excess of 600 lines of code. For STEM Majors: Computer Science, Computer Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC. *C-ID: COMP 122

CS 003A
FUNDAMENTALS OF COMPUTER SCIENCE II (C++)
4 units
Prerequisite: CS 002.
Second programming course in the series of Introduction to Computer Science courses. Continuation of the C++ language including: classes, structures and unions, overloaded operators and friend functions, pointers and dynamic arrays, function pointers, functors, abstract data types and container objects polymorphisms, inheritance and multiple inheritance, templates and the Standard Template Library, exception handling, namespaces and separate compilation, recursion, creation of libraries, advanced software design, testing, and debugging techniques. May be taken concurrently with CS 003B. For STEM Majors: Computer Science, Computer Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer credit: CSU; UC

CS 003B
FUNDAMENTALS OF COMPUTER SCIENCE II (JAVA)
4 units
Prerequisite: CS 002.

Alternate second programming course in the series of Introduction to Computer Science courses. JAVA language including: Data types, variables, control structures, GUI and Object Oriented Design, user-defined methods, method overloading, user-defined classes and abstract data types, accessor and mutator methods, collections, single and multidimensional arrays, polymorphisms, inheritance, exception handling, recursion, searching and sorting algorithms, creation of libraries, advanced software design, testing, and debugging techniques web-based applets. May be taken concurrently with CS 003A. For STEM Majors: Computer Science, Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer credit: CSU; UC

CS 003C
FUNDAMENTALS OF COMPUTER SCIENCE II (PYTHON)
4 units
Prerequisite: CS 002.
Second programming course in the series of Introduction to Computer Science courses. Topics of the Python language include: data types, variables, control structures, Python Objects and Oriented Design, standard and advanced mathematical libraries, toolchain use and Python Frameworks, user-defined classes and abstract collections, single and multidimensional arrays, Python lists, tuples, collections, and dictionaries. May be taken concurrently with CS 003A or CS 003B. Recommended for STEM Majors: Computer Science, Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC *Course Identification Numbering System (C-ID)

CS 006
INTRODUCTION TO APPLIED LOGIC DESIGN
4 units
Prerequisite: CS 002.
Characteristics of digital systems, truth functions, Boolean algebra, switching devices, minimization of Boolean functions, single and multiple output circuits, Mealy and Moore networks. Karnaugh maps, state tables. Design and optimization of combinational circuits and sequential circuits. Recommended completion of or concurrent enrollment in Math 022. For Computer Science, Computer Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC

CS 008
FUNDAMENTALS OF COMPUTER SCIENCE III – DATA STRUCTURES (C++)
4 units
Prerequisite: CS 003A or 003B.
Third programming course in the series of Introduction To Computer Science courses. Data structure concepts in designing and implementing algorithms taught in the C++ programming language. Lists, arrays, binary trees, btrees, AVL trees, heaps, stacks, queues, priority queues, hashing and graphs. Searching, sorting and merging algorithms. Advanced concepts and manipulation of C++ pointers, pointers to functions in C++ class members, functors and advanced pointer arithmetic. At least two programming assignments of 1,500 to 2,500 lines of C++ code will be required of each individual

student. At least one two student team project of 3,000 to 4,000 lines of code will be required. For STEM Majors: Computer Science, Computer Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC

CS 018
UNIX SCRIPTING WITH BASH
4 units
Prerequisite: CS 002.
Shell scripting, script parameters, looping, piping, background processing, pattern manipulation, functions, subroutines, process forking, major BASH utilities, AWK scripting. For Computer Science, Computer Engineering, Mathematics, and Science majors, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC CS 020 INDEPENDENT STUDY 1 unit Prerequisites: Completion of three other computer science courses. Individual projects; problem formulation, design, documenting, programming and testing. Total of 54 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. CS 038 INTRODUCTION TO SOFTWARE ENGINEERING 5 units Prerequisite: CS 008. Introduction to the concepts, methods, and current practice of software engineering and the software life cycle. Study of large-scale software production; software life cycle models as an organizing structure; principles and techniques appropriate for each stage of production. Laboratory work involves a group project illustrating these elements. Total of 90 hours lecture. Transfer Credit: CSU; UC

COMPUTER INFORMATION SYSTEMS

(Business Division)

CIS 010
INTRODUCTION TO INFORMATION SYSTEMS
3 units
Examination of information systems and their role in business. Focus on information systems, database management systems, system development, networking, Internet and web, e-commerce, security, application development languages and tools, computer systems hardware and software components. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU: UC. *C-ID: ITIS 120 Grade Mode: L

CIS 011
INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS
4 units
Introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level Information and Communication Technology (ICT) professionals. The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional will be introduced. Preparation for the CompTIA A+ certifcation exams. Total of 54 hours lecture and 54 hours laboratory. Transfer Credit: CSU. *C-ID: ITIS 110 Grade Mode: L

CIS 012 *(CS 002 + CS 003C PY)*
INTRODUCTION TO PROGRAMMING
3 units
Foundation course in programming for students with little or no programming knowledge or experience. An introduction to the fundamental concepts and models of application development including the basic concepts of program design, data structures, programming, problem solving, programming logic, and fundamental design techniques for event-driven programs. Hands-on experience with Python programming language and development platform. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L

CIS 014 *(CS 003A + CS 003B)*
C++ PROGRAMMING
3 units
Prerequisites: CIS 012. Foundations of C and C++. Operators, functions, arrays, pointers, structures, unions, classes, C++ data types, polymorphism, inheritance, encapsulation, virtual functions, templates, file processing, control structures, and an emphasis on object-oriented program design. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L, P

CIS 016
JAVA PROGRAMMING
3 units
Prerequisites: CIS 012. Java programming language: classes, methods, operators, encapsulation, polymorphism, inheritance, dynamic binding, fle processing, control structures, function overloading, use of AWT, creation and use of applets in Internet applications, and an emphasis on object oriented program design. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L, P

CIS 031 *(CS 008 ?)*
INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS
3 units
Prerequisite: CIS 011.
Introduction to concepts in data and information management centered around the core skills of identifying organizational information requirements, conceptual data modeling techniques, conversion of conceptual data models into relational data models, verification of structural characteristics with normalization techniques, and implementation of a relational database using an industrial-strength database management system. Overview of data quality and data security tasks, database application development, and data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU Grade Mode: L

CIS 036
INTRODUCTION TO VISUAL BASIC
3 units
Prerequisite: CIS 010. Recommended Preparation: CIS 012. Introduction to programming using Visual Basic. Course will cover guidelines to build a simple application; and how to create a graphical user interface (GUI) design utilizing various design tools. Fundamentals will be presented on basic coding elements, data fle manipulation, use of variables, constants, selection and branching structures, looping, data validation, sub and function procedures, string manipulation, and creating and accessing arrays. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L

CIS 038
ADVANCED VISUAL BASIC
3 units
Prerequisite: CIS 036.
Advanced techniques in the use of VISUAL BASIC, such as user-friendly menus, internal program documentation and program structure; subroutines, file manipulation, special functions, problem solving and graphics. Total of 36 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC Grade Mode: L

CIS 193
WEB DEVELOPMENT USING JAVASCRIPT
3 units
Prerequisite: CIS 012.
Web application programming using JavaScript. Course covers adding and manipulating JavaScript code; handling expressions, debugging and error handling; working with browsers, Object-Oriented programming, manipulating strings and arrays; handling security, programming interfaces with today's devices, updating Web pages with Ajax and HTTP, requesting and receiving server data; coding and implementing JQuery. Total of 36 hours lecture and 54 hours laboratory. Grade Mode: L

CIS 197
WEB DEVELOPMENT USING PHP & MYSQL
3 units
Prerequisite: CIS 012.
Web applications development using PHP and MySQL to build professional, database-driven Web sites that incorporate authentication and security. Includes a comprehensive Web development project that applies core concepts resulting in a PHP code demonstration site. Total of 36 hours lecture and 54 hours laboratory. Grade Mode: L

CIS 199
DEVELOPMENT USING RUBY ON RAILS
3 units
Prerequisite: CIS 012.
Introduction to Web Applications Development using the Ruby on Rails framework. Topics include Ruby fundamentals, Rails basics, Rails installation, Model-View Controller (MVC) architecture, Active Record, Controllers, Views, test-driven development, application security, and deployment and scaling. Total of 36 hours lecture and 54 hours laboratory

COSMETOLOGY

(Engineering and Technology Division)

COSM 100
INTRO TO COSMETOLOGY
9 units
Fundamental theory, techniques, and procedures on basic hair, skin, and nail care. Lectures, demonstrations and practical procedures in basic hair, skin, and nail care with emphasis on safely and client protection. Other topics include California State Board of Barbering and Cosmetology rules and regulations, health and safety codes, general science as it relates to cosmetology, infection control, chemistry, and electricity. Total of 81 hours lecture and 243 hours laboratory.

COSM 105
SKIN CARE
4 1 /2 units
Prerequisite: Cosm 100.
Skin disorders and diseases and the different types of skin services offered in the salon. Total of 36 hours lecture and 135 hours laboratory.

ECONOMICS

(Social Sciences Division)

ECON 001A
PRINCIPLES OF ECONOMICS
3 units
Prerequisites: One of the following courses: MATH 125 or MATH 127B or MATH 128B or MATH 250.
Macro-economics. Introduction to concepts and tools of economic analysis. Theory of demand and supply, national income accounting, economic growth, recessions and infation. Fiscal and monetary theories and policies. The Federal Reserve system, tools of monetary control and international trade and fnance. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: ECON 202 Grade Mode: L, A, P

ECON 001B
PRINCIPLES OF ECONOMICS
3 units
Prerequisites: ECON 001A and one of the following: MATH 125 or MATH 127B or MATH 128B
Micro-economics. Price analysis, income distribution, comparisons of market structures, resource markets, international trade, income distribution and the role of government. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: ECON 201

ENGLISH

(English Division)

ENGL 001A
READING AND COMPOSITION
4 units
Prerequisite: One of the following: (1) Engl 100; (2) ESL 033B; (3) placement based on the English assessment process.
Recommended Preparation: Engl 014. Course Descriptions Development of expository and argumentative essays. Instruction in writing annotated papers. Analysis of various forms of writing with emphasis on expository and argumentative essays. No credit if taken after Engl 001AH or 001AS. Total of 72 hours lecture. Transfer Credit: CSU; UC. *C-ID: ENGL 100

ENGL 001C
INTERMEDIATE COMPOSITION — CRITICAL THINKING AND ARGUMENT
4 units
Prerequisite: Engl 001A, 001AH, or 001AS.
Principles of critical thinking applied to writing and reading on complex issues which incorporate logic, reasoning, persuasion, analysis and evaluation of appropriate prose models, including those employing argument, other rhetorical modes, and critical thinking strategies specific to various modes of thought; selective use of citation and documentation. No credit if taken after Engl 001CH. Total of 72 hours lecture. Transfer credit: CSU; UC. *C-ID: ENGL 105

ENGL 005A
CREATIVE WRITING
3 units
Prerequisite: Eligibility for Engl 001B.
Creative literary expression; short story, poetry and essay. Individual experimentation with various forms; students evaluate their work and work of classmates in light of contemporary writings. Total of 54 hours lecture. Transfer Credit: CSU; UC

ENGL 005B
CREATIVE WRITING
3 units
Prerequisite: Engl 005A, 006, 007 or 008.
Creative literary expression such as: short story, poetry, dramatic form and essay. The focus is on in-depth criticism of student work and professional writers. Total of 54 hours lecture. Transfer Credit: CSU; UC

ENGL 006
SHORT STORY WRITING

3 units

Prerequisite: Eligibility for Engl 001B.

Theory and practice in writing the short story. Total of 54 hours lecture. Transfer Credit: CSU; UC

HISTORY

(Social Sciences Division)

HIST 007A

UNITED STATES HISTORY TO 1876

3 units

Chronological, thematic, and analytical study of the political, economic, social, cultural, and diplomatic history of the United States to Reconstruction. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: HIST 130

MATHEMATICS

(Mathematics Division)

MATH 003
COLLEGE ALGEBRA FOR STEM
5 units
Prerequisite: MATH 131 or placement based on the Math assessment process.
Algebra, graphing, and applications of functions; polynomial, rational, logarithmic and exponential functions, equations and inequalities; linear and nonlinear systems of equations; conic sections; sequences and series; the binomial theorem. Intended for STEM majors but open to all qualifed students. Total of 90 hours lecture. Transfer Credit: CSU; UC credit limitations. See counselor. Grade Mode: L, P

MATH 005A
SINGLE VARIABLE CALCULUS I
5 units
Prerequisites: Math 007B, Math 009 or placement based on the Math assessment process.
Limits and continuity; differentiation and integration of algebraic functions; applications. Total of 90 hours lecture. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: MATH 211

MATH 005B
SINGLE VARIABLE CALCULUS II
5 units
Prerequisite: Math 005A or placement based on the Math assessment process.
Differentiation and integration of trigonometric, exponential, logarithmic, hyperbolic functions, polar, and parametric equations; applications and techniques of integration; indeterminate forms and infinite sequences and series. Total of 90 hours lecture. Transfer Credit: CSU; UC

MATH 005C
MULTIVARIABLE CALCULUS
5 units
Prerequisite: Math 005B or placement based on the Math assessment process.
Parametric equations, polar coordinates, vectors and vector calculus, partial differentiation, multiple integration, Green's theorem, divergence theorem of Gauss, Stokes' theorem. Total of 90 hours lecture. Transfer Credit: CSU; UC. *C-ID: MATH 230

MATH 007A
MATHEMATICAL ANALYSIS 1
4 units
Prerequisite: Math 131 or Math 133B or Math 134B, and Math 139; or placement based on the assessment process.

Algebraic, exponential, logarithmic and trigonometric functions; inverses of functions; equations and inequalities involving transcendental functions; zeros of polynomials; graphing techniques; angle measure; mathematical modeling. For mathematics and science majors, but open to all qualified students. No credit if taken after Math 009. Total of 90 hours lecture. Transfer Credit: CSU; UC credit limitations. See counselor.

MATH 007B
MATHEMATICAL ANALYSIS 2
4 units
Prerequisite: Math 007A.
Trigonometric Identities and Equations, Solutions of Triangles, Polar Coordinates, Conic Sections, Parametric Equations, Sequences and Series, Mathematical induction, solutions to linear and non-linear systems, vectors and their applications. For mathematics and science majors, but open to all qualified students. Total of 90 hours lecture. No credit if taken after Math 009. Transfer Credit: CSU; UC credit limitations. See counselor

MATH 008
PRECALCULUS TRIGONOMETRY
4 units
Prerequisite: MATH 003 or placement based on the assessment process.
Trigonometric functions and their graphs; inverse trigonometric functions; unit circle and special right triangles; trigonometric identities and equations; polar and parametric equations; polar and rectangular forms of complex numbers and vectors; matrix algebra and Cramer's Rule; mathematical induction. Intended for STEM majors but open to all qualifed students. No credit if taken after MATH 007B. Total of 72 hours lecture.

MATH 009
PRECALCULUS MATHEMATICS
5 units
Prerequisite: MATH 008 or placement based on Math assessment process.
Algebraic, exponential, logarithmic and trigonometric functions; inverse functions; zeros and graphs of functions; inequalities; matrices; determinants; sequences and series; binomial theorem; mathematical induction; permutations, combinations and probability; topics in analytic geometry including curve sketching and conic sections. No credit if taken after MATH 007A or 007B. Total of 90 hours lecture. Transfer Credit: CSU; UC credit limitations. See counselor.

MATH 010
LINEAR ALGEBRA AND APPLICATIONS
5 units
Prerequisite: Math 005B.
Vector spaces, linear transformations, determinants, solutions of systems of equations, algebra of matrices. Total of 90 hours lecture. Transfer Credit: CSU; UC. *C-ID: MATH 250

MATH 022
DISCRETE MATHEMATICS
4 units
Prerequisite: Math 003 or Math 007A or CS 002 or placement based on the Math assessment process.
Study of finite mathematical systems. Includes set theory logic, combinatorics, relations and functions, matrix algebra, Boolean algebra, recursion, graph theory. For mathematics and computer science majors, but open to all qualified students. Total of 90 hours lecture. Transfer Credit: CSU; UC

MATH 055
DIFFERENTIAL EQUATIONS
5 units
Prerequisites: Math 005C and Math 010.
Ordinary differential equations with emphasis on the linear equation and its applications in engineering and physics, series solutions, Laplace transforms, Fourier series and their application in partial differential equations. No credit if taken after Math 055H. Total of 90 hours lecture. Transfer Credit: CSU; UC. *C-ID: MATH 240

MATH 125
BEGINNING ALGEBRA
4 units
Prerequisite: Math 402 or 400B or 250, or placement based on the Math assessment process.
Simplifying linear, polynomial, rational, and radical expressions. Using properties of exponents. Factoring polynomials. Applications and solving of linear, rational, radical, and quadratic equations. Graphing linear equations and solving systems of linear equations. Maximum credit for Math 125, 127AB, and 128AB is 4 units. No credit if taken after Math 127B or Math 128B. Total of 90 hours lecture.

MATH 131 - Placed
INTERMEDIATE ALGEBRA
4 units
Prerequisite: Math 125 or Math 127B or Math 128B or placement based on the Math assessment process.
Solving nonlinear equations such as rational, radical, exponential and logarithmic equations. Applications of nonlinear equations. Operations on and graphs of functions. Maximum credit for Math 131, 133AB, and 134AB is 4 units. No credit if taken after Math 133B or 134B. Total of 90 hours lecture.

MATH 139
PLANE GEOMETRY
3 units
Prerequisite: Math 125 or Math 126C or Math 127B or Math 128B.

Geometric facts necessary for advanced work in mathematics. Deductive process emphasized. Total of 90 hours lecture.

MATH 331
SKILLS FOR COLLEGE SUCCESS IN INTERMEDIATE ALGEBRA
2 units
Corequisite: MATH 131. Development and rigorous practice of essential study techniques and course material for success in Intermediate Algebra. Integration of web-based supplemental instruction, life management skills, strategies for successful classroom experience, and critical thinking/problem solving strategies. No credit if taken after MATH 110. For students admitted to the Math Path program but open to all qualified students. Pass/no pass grading. Total of 45 hours of lecture.

PHYSICS

(Natural Sciences Division)

PHYS 001A
GENERAL PHYSICS
5 units Prerequisite: Math 005A.
Calculus-based study of classical mechanics, including unit systems, particle kinematics, Newton's laws of motion, work and energy, linear and angular momentum, and rigid-body rotation and equilibrium. Total of 72 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: PHYS 205; PHYS SEQ 200S (WITH PHYS 001B, 001C, 001D)

PHYS 001B
GENERAL PHYSICS
5 units
Prerequisites: Phys 001A and Math 005A.
Calculus-based study of gravitation, fluid mechanics, oscillations and waves, and thermodynamics. Total of 72 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: PHYS SEQ 200S (WITH PHYS 001A, 001C, 001D)

PHYS 001C
GENERAL PHYSICS
5 units
Prerequisites: Phys 001B and Math 005B.
Calculus-based study of electricity and magnetism, and geometrical and physical optics. Total of 72 hours lecture and 72 hours laboratory. Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: PHYS 210; PHYS SEQ 200S (WITH PHYS 001A, 001C, 001D)

PHYSIOLOGY

(Natural Sciences Division)

PYSO 001
HUMAN PHYSIOLOGY
4 units
Prerequisites: Anat 025 and Chem 002A.
Introduction to human cellular and organ physiology, human genetics and embryology, current topics in health. Recommended sophomore standing. Total of 54 hours lecture and 54 hours laboratory. Transfer Credit: CSU; UC

POLITICAL SCIENCE

(Social Sciences Division)

POLS 001
INTRODUCTION TO AMERICAN GOVERNMENT AND POLITICS
3 units
Introduction to American government and politics incorporating California state and local history, constitution, institutions and policies. Pols 001 and 002 usually required for advanced political science courses. No credit if taken after AmerI 005. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID:

POLS 002
COMPARATIVE GOVERNMENT AND POLITICS
3 units
Comparative study of constitutional principles, governmental institutions and political processes in selected contemporary nations. Emphasis on the U.S. and major European governments. Pols 001 and 002 usually required for advanced political science courses. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: POLS 130

POLS 006
THE U.S. AND WORLD POLITICS
3 units
Introduction to various aspects of World Politics including the role of major political, social, economic, and defense institutions in countries. The model is American policy and relationship to global and bilateral institutions. Total of 54 hours lecture.
Transfer Credit: CSU; UC
Grade Mode: L, P

POLS 007
PRINCIPLES OF POLITICAL SCIENCE
3 units
Scope and methods of political science; basic political philosophies and ideologies; some concepts of the modern state, public law, public administration and government. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: POLS 150

POLS 021
INTRODUCTION TO POLITICAL ECONOMY
3 units
Political economy as a system; role of government; relationships among the public, quasi-public, and private sectors; strategies of government interventions; and the impact of government policies on the economy at the local, state, national, and global levels. Total of 54 hours lecture. Transfer Credit: CSU; UC

POLS 022
INTRODUCTION TO POLITICAL THEORY
3 units
Introductory exploration of the nature and role of major political theories from ancient times to the present; central questions of political life, views of human nature, political organizations, power, justice, and revolutions. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: POLS 120

RELIGIOUS STUDIES

(Social Sciences Division)

RELG 003
COMPARATIVE RELIGIONS: NEAR EAST
3 units
Cultural history and doctrinal interpretations of living religions of Near East: Zoroastrianism, Islam, Judaism and Christianity. Summary contrasts and comparisons with emphasis on present-day religious issues and their relationship to social and political problems. Total of 54 hours lecture. Transfer Credit: CSU; UC Grade Mode: L, A, P

SPEECH COMMUNICATION

(Performing and Communication Arts Division)

SPCH 001
FUNDAMENTALS OF SPEECH
3 units
Principles and practices of public speaking, speech composition, organization, audience analysis and listening skills. Recommended proficiency in spoken English. Total of 54 hours lecture. Transfer Credit: CSU; UC

SPCH 010
INTERPERSONAL COMMUNICATION
3 units
Principles and practices in communication and communication theories. Intrapersonal, interpersonal and small group communication. Non-verbal communication, perception-information processing, attitude change and semantics. Recommended proficiency in spoken English. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: COMM 130

SPCH 012
ARGUMENTATION AND CRITICAL THINKING
3 units
Prerequisite: Engl 001A.
Oral and extensive written analysis of propositions, tests of evidence, argumentation fields, critical analysis and interpretation and evaluation of contemporary public controversy. Total of 54 hours lecture. Transfer Credit: CSU; UC. *C-ID: COMM 120
UCLA Transferable

STATISTICS

STAT 018
STATISTICS FOR BEHAVIORAL AND SOCIAL SCIENCES
4 units
Prerequisite: MATH 131 or 133B or 134B or 141 or 150 or placement based on the statistics assessment process.
(Social Sciences Division)
Basic statistics for majors in anthropology, economics, psychology and sociology; tables, charts, summary measures, regression and correlation, statistical inference, sampling, variance, nonparametric and parametric tests, simple multivariate analysis, ANOVA; use of calculators and EXCEL. No credit if taken after Stat 015 or 050. Total of 90 hours lecture.
Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: SOCI 125
Grade Mode: L, A, P

STAT 050
ELEMENTARY STATISTICS
4 units
Prerequisite: MATH 131 or 141 or 150 or placement based on the Math assessment process.
Analysis of data using statistical methods: data collection, descriptive statistics, probability theory and inferential statistics. Topics include: sampling; measures of central tendency and variation; frequency charts and graphical representations of data; introductory probability; sampling distributions; correlation and linear regression; confidence intervals; hypothesis testing, including analysis of variance; and technology based statistical analysis from applications in engineering, social sciences, economics, psychology, and natural sciences. No credit if taken after STAT 015, 018, or 050H. Total of 72 hours lecture.
Transfer Credit: CSU; UC credit limitations. See counselor. *C-ID: SOCI 125
Grade Mode: L, P

http://www.assist.org/web-assist/reportOnly.do?agreement=tca&reportPath=REPORT_2&reportScript=Rep2.pl&event=28&arc=N&EM=1&sia=PASADENA&ia=PASADENA&ria=UCLA&oia=UCLA&ay=17-18&aay=16-17
http://www2.assist.org/exploring-majors/findMajorDescription2.do

Course Outline

Biological Technology – Computational Biology

Certificate of Achievement –
Today's biotechnology companies depend on the ability of their employees to understand and use computational skills to handle large amounts of research data. This curriculum provides interdisciplinary skills required to seek employment at an entry level in performing data acquisition, management, and analysis in laboratory environments. The certificate program can also benefit working professionals seeking to advance or change their careers. Students will learn programming, statistics, basic concepts of molecular biology, and use of bioinformatics applications and resources. The program emphasizes the skills necessary to become creative and flexible team members and leaders who can work with others in the dynamic interdisciplinary team environment found in today's biotechnology companies. Students in the certificate program will be required to complete a programming project in the Biology 028 class. A Certificate of Achievement is awarded upon completion of all required courses with a grade of C or better. Program Outcomes: 1. Demonstrate an understanding of the fundamental concepts of molecular biology, including DNA, genes, proteins, and genomes. 2. Use online resources such as NCBI (National Center for Biotechnology Information) and bioinformatics applications to research and analyze biological data. 3. Write computer programs to perform customized analyses of biological data, using statistical measures to determine the significance of results.
Requirements for the Certificate of Achievement (16–17 units):
Recommended sequence:
Semester I
CIS 010 – Introduction to Information Systems (3)
BIOL 039 – Modern Human Genetics (4)
or BIOL 102A – Biological Technology–Basic Techniques (3)
or BIOL 102B – Biological Technology–Advanced Techniques (3)
Semester II
STAT 018 – Statistics for Behavioral and Social Sciences (4)
or STAT 050 – Elementary Statistics (4)
CIS 036 – Introduction to Visual Basic (3)
Semester III
BIOL 028 – Introduction to Bioinformatics (3)

Programming 2017-2018

Certificate of Achievement – **Associate in Science Degree**

This Programming curriculum prepares students with necessary skills to seek entry-level employment in programming. Instruction includes development, testing, deployment, and maintenance of applications using Python, C++, Java, and Visual Basic programming languages. A Certificate of Achievement is awarded upon completion of all required courses with a grade of C or better. 180 PASADENA CITY COLLEGE • 2018-2019 Program Outcomes:

1. Develop, test, deploy, and maintain applications using Python programming language.
2. Develop, test, deploy, and maintain applications using C++ programming language.
3. Develop, test, deploy, and maintain applications using Java programming language.
4. Develop, test, deploy, and maintain applications using Visual Basic programming language.

Requirements for the Certificate of Achievement (18-19 units):

CIS 012 – Introduction to Programming Concepts and Methodologies Using Python (3)
CIS 014 – C++ Programming (3)
CIS 016 – Java Programming (3)
CIS 036 – Introduction to Visual Basic (3)

Required Electives (Select 2 Courses)

CIS 038 – Advanced Visual Basic (3)
CIS 192 – Introduction to Web Development (3)
CIS 193 – Web Development Using Javascript (3)
CIS 197 – Web Development Using PHP and Mysql (3)
CIS 199 – Web Development Using Ruby On Rails (3)
CIS 031 – Introduction to Database Management Systems (3)
CIS 062 – Introduction to Systems Analysis (3)
CIS 010 – Introduction to Information Systems (3)
CIS 011 – Information and Communication Technology Essentials (4)
CIS 040 – UNIX/LINUX Administration (3)
Recommended Electives Engl 100 – Reading and Writing Skills (4)

Programming 2016-2017

–

Certificate of Achievement, **Associate in Science** Degree

Top Code: 0707.10

The curriculum prepares students with entry-level skills to seek employment in programming. Emphasis will be on providing students with practical experience in utilizing at least two programming languages. Instruction will cover such topics as operating systems, applications and common programming languages. Students must be willing to spend considerable time outside of class working on assignments.

A Certificate of Achievement is awarded upon completion of all required courses with a grade of C or better.

Program Outcomes:

1. Demonstrate an understanding of computer programming constructs and be able to write programming code in several programming languages to solve a business problem.
2. Design and layout the sequence of steps to solve a problem using appropriate tools and charts.
3. Write program code using the syntax of the programming language skills obtained during the course of this program.
4. Test program code, using different sets of data.
5. Maintain documentation to communicate the purpose of the program steps.
6. Present E-Portfolio to showcase skills necessary to qualify for an entry-level programming job.

Recommended sequence:

Semester I

CIS 010 – Introduction to Information Systems (3)

CIS 012 – Introduction to Programming (3)

~~CIS 062 – Introduction to Systems Analysis (3~~)

Semester II

CIS 014 – C++ Programming (3)

CIS 036 – Introduction to Visual Basic (3)

Semester III

CIS 016 – Java Programming (3)

CIS 020 – Independent Study (1)

~~CIS 038 – Advanced Visual Basic (3)~~

Recommended Electives

CIS 011 – Information and Communication Technology Essentials (4)

CIS 030 – Networks and Telecommunications (3)

ENGL 100 – Reading and Writing Skills (4)

Requirements for the Associate in Science Degree – see page 89.

Political Science

POLITICAL SCIENCE (Social Sciences Division) Political Science – **Associate in Arts Degree for Transfer to CSU** Top Code: 2207.00 Knowledge of the past is a prerequisite for understanding the present and preparing for the future. The Associate in Arts in Political Science for Transfer Degree offers an array of courses designed to enable students to comprehend how they, their nation, and the contemporary world have been shaped by historical events and forces. It is only by studying the Political Science of other civilizations and cultures that we hope to gain perspective on our own. In addition to producing teachers and historical researchers, the AA-T in Political Science helps prepare students for other careers. Majoring in Political Science is excellent preparation for students interested in a teaching career, the legal profession, or advanced work in the discipline. Students wishing to become business executives, administrators, and public servants profit immensely by gaining the methodological skills of the historian. Historians learn to gather, synthesize, analyze, and interpret evidence; they become skilled in presenting their conclusions to a general audience in a lucid and logical manner. Political Science is an excellent foundation for a broadly based education in the liberal arts. The Associate in Arts in Political Science for Transfer Degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the above major requirements and the Intersegmental General Education Transfer Curriculum (IGETC-CSU) or California State University General Education (CSUGE) requirements with a minimum grade point average of 2.0. All courses in the major must be completed with a grade of "C" or better. (Students completing this degree are not required to fulfill additional local graduation requirements) Associate in Arts in Political Science for Transfer Degree

REQUIRED CORE: 3 units

POLS 001 – Introduction to American Government and Politics (3)

LIST A: Select 3 Courses (9–10 units)

POLS 002 – Comparative Government (3)
POLS 006 – The US and World Politics (3)
POLS 007 – Principles of Political Science (3)
POLS 022 – Introduction to Political Theory (3)
STAT 018 – Statistics for Behavioral and Social Sciences (4)
or STAT 050 – Elementary Statistics

(4) LIST B: Select any two Courses from below or any List A course not used above (6 units)

ANTH 002 – Cultural Anthropology (3)
ECON 001A – Principles of Economics (3)
ECON 001B – Principles of Economics (3)
GEOG 002 – Cultural Geography (3)
POLS 021 – Introduction to Political Economy (3

REQUIRED SUBTOTAL..... 18–19
CSU General Education or IGETC CSU Pattern 37-39
Transferable Electives (as needed to reach 60 transferable units)
DEGREE TOTAL 60