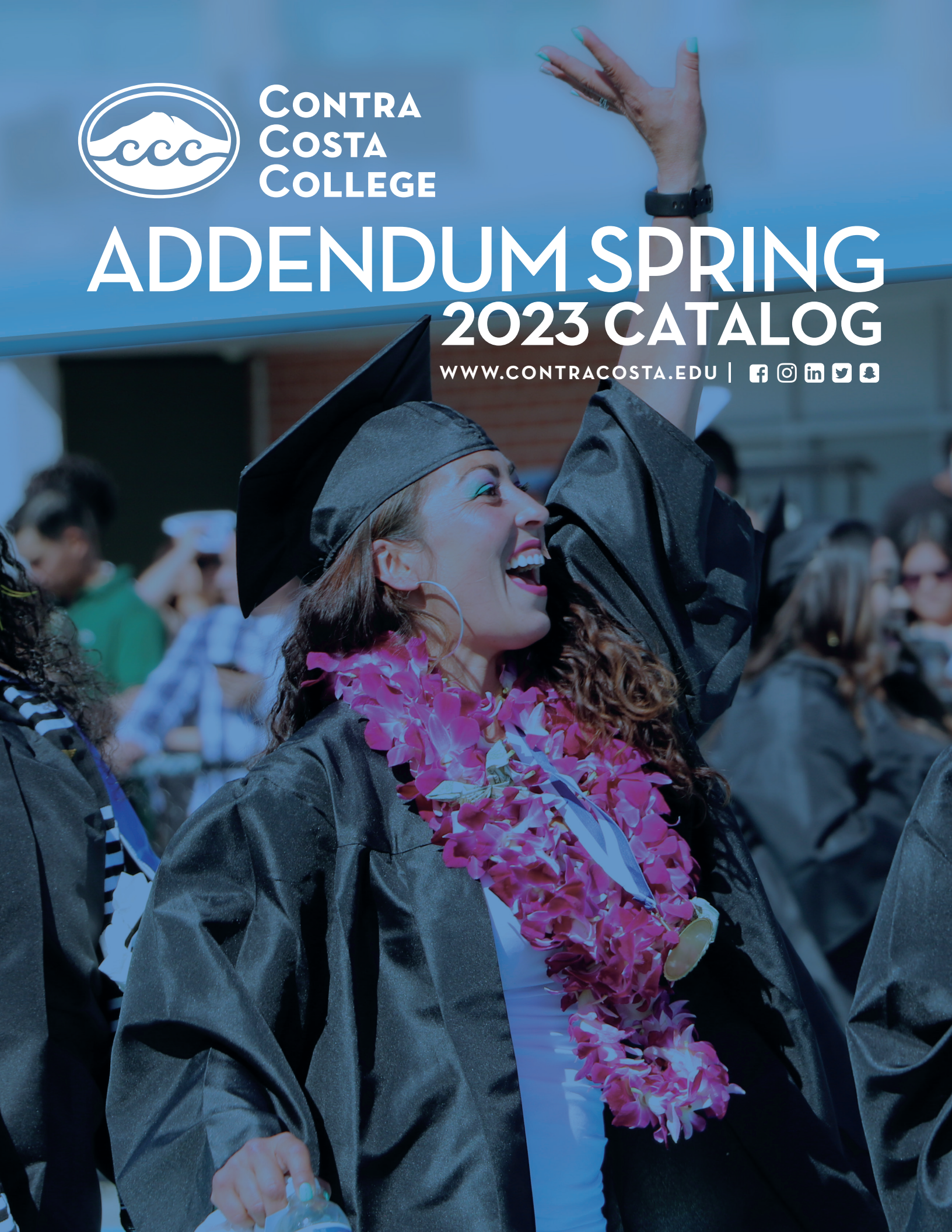

CONTRA COSTA COLLEGE

ADDENDUM SPRING 2023 CATALOG

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2022-2023 CATALOG ADDENDUM

Effective Spring Semester 2023 unless otherwise noted

REVISED 2022-2023 Catalog Sections

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CHAPTER FOUR:

Changes to Degrees, Certificates and Courses

CHAPTER 4 CHANGES
NEW PROGRAMS

Biological Sciences

Certificate of Completion
Laboratory Professional I.....54-288 Noncredit Hours

The Laboratory Professional I certificate provides students knowledge and skills needed for employment and career in the life science industry. Students gain laboratory skills through training and practice according to life science industry professional standards. Students work on real-world projects which are all hands-on and include scientific sampling, analysis, and data collection. Students in the program will also gain the ability to prepare and effectively present scientific work, data and laboratory analysis to a wide variety of audiences. Students completing this certificate are well-prepared for internships in university, government, and life science industry laboratories. The Laboratory Professional I certificate is also useful for gaining laboratory employment.

A certificate of completion may be earned by completing all the courses required for this major with a grade of P (Pass).

Required Courses :

18-54 noncredit hours	BIOSC-876N	Science Communication: Professional Report, Workshop, Public Media

Plus one of the following options:

Option #1

54 noncredit hours	BIOSC-857N	Foundations in Biotechnology
and		
54 noncredit hours	BIOSC-859N	Foundations in Biotechnology Laboratory

Option #2

36-234 noncredit hours	BIOSC-888N	Biotechnology Operations: Analytic Lab, Bioprocessing

Certificate of Completion
Biological Testing Technician.....159-252 Noncredit Hours

The Biological Testing Technician certificate provides training appropriate for work in certified testing labs. Students will learn and practice lab skills for processing and testing samples for chemical content and contaminants, presence of beneficial and harmful microbes and potency of product. The types of certified testing lab include medical diagnostics (such as COVID-19 testing), environmental monitoring, food nutrition and safety, and cannabis.

A certificate of completion may be earned by completing all the courses required for this major with a grade of P (Pass).

Required Courses :

15-108 noncredit hours	BIOSC-875N	Work Skills in Preparation for Applied Life Science Projects
54 noncredit hours	BIOSC-857N	Foundations in Biotechnology
54 noncredit hours	BIOSC-859N	Foundations in Biotechnology Laboratory
36 noncredit hours	BIOSC-882N	Safety, Efficacy, and Quality in Regulated Products

Computer Information Systems

Certificate of Accomplishment
Project Management.....5 Units

This program will allow students to achieve in a short period of time, valuable knowledge to be employable with the field of Project Management. Students completing this program will be able to: Demonstrate knowledge of Project Management methodology, Demonstrate Project Management practices, tools, and concepts. Demonstrate the ability to use easily available software to manage a project, create presentations, and documents. Learn the aspects of Project Management, including scheduling, presentation, charting, and planning.

A certificate of accomplishment may be earned by completing all the courses required for this major with a grade of C or better.

Required Courses:

3 units	CIS-198	Introduction to Project Management
2 units	CIS-199	Project Management-Applications

Certificate of Completion
Project Management..... 108 Noncredit Hours

This program will allow students to achieve in a short period of time, valuable knowledge to be employable with the field of Project Management. Students completing this program will be able to: Demonstrate knowledge of Project Management methodology, Demonstrate Project Management practices, tools, and concepts. Demonstrate the ability to use easily available software to manage a project, create presentations, and documents. Learn the aspects of Project Management, including scheduling, presentation, charting, and planning.

A certificate of completion may be earned by completing all the courses required for this major with a grade of P (Pass).

Required Courses:

54 noncredit hours	CIS-898N	Introduction to Project Management
54 noncredit hours	CIS-899N	Project Management-Applications

Physics

Associate in Science for Transfer Degree (UCTP)
UCTP Physics .....44 Units

Physics is the science concerned with the properties of matter and energy and the relationships between them. It relies on making observations and mathematics to describe mechanics, electricity and magnetism, optics, acoustics, and heat. Modern physics, based on quantum theory, includes atomic, nuclear, particle, and solid-state studies. A background in physics is important not only to physicists, but also to students interested in chemistry, biology, engineering, and medicine. Details of the CCC physics program appear below. In addition to physics courses, physics students will need to develop a strong background in math. Successful completion of an Associate in Science in Physics for UC Transfer Pathway degree guarantees admissions into one of the University of California system that only accepts Transfer Admission Guarantee (TAG) and satisfactory completion of the following: (A) A minimum of 64 semester UC transferrable units, which includes major and general education courses. Students must meet the minimum grade of "C" for each course in the major. This program is an extension of Pathways+, which combines Transfer Pathways and a Transfer Admission Guarantee (TAG). Students completing the UCTP Associate's Degree in Physics must submit a TAG to one of the six campuses to guarantee a spot at a UC campus. The minimum GPA is the minimum required for TAG at the TAG campus. Students who complete the UCTP will have completed lower-division major prep for Physics, and so will have the appropriate preparation to enter any UC campus. Students with a strong GPA will have a better chance of gaining admission to multiple UC campuses, not just the TAG campus (but only the TAG campus is guaranteed). Completing a Transfer Pathway or the UCTP degree can be one factor considered under Comprehensive Review. The degree itself will likely not be the deciding factor, but the major prep covered by the degree will help students be more competitive. (B) Complete a minimum of 20-semester transferable units from the Intersegmental General Education Transfer Curriculum (IGETC) pattern, which the courses must aligned with the UC Transfer Admissions Eligibility Course List on ASSIST. This template's general education requirements presume completion of two courses in Area 3 and two courses in Area 4 after transfer to the University of California to complete the entire IGETC pattern. This represents typical course taking patterns for the discipline.

Required core courses:

4 units	PHYS-130	General Physics I
4 units	PHYS-230	General Physics II
4 units	PHYS-231	General Physics III'
5 units	CHEM-120	General College Chemistry I
5 units	CHEM-121	General College Chemistry II
5 units	MATH-190	Analytic Geometry and Calculus I
4 units	MATH-191	Analytic Geometry and Calculus II
5 units	MATH-290	Analytic Geometry and Calculus III
4 units	MATH-200	Introduction to Linear Algebra
4 units	MATH-292	Introduction to Differential Equations

NEW COURSES

Biological Science (BIOSC)

BIOSC-857N Foundations in Biotechnology
Noncredit: 36 hours of lecture, 18 hours of laboratory, per term, P/NP/SP
Corequisite: *BIOSC-859N or BIOSC-159*
This course is designed to provide students wanting to enter the field of biotechnology with a solid foundation in the chemical, biochemical, microbiological, mathematical, bioinformatic and regulatory concepts used in biotechnology labs. Students practice laboratory calculations, design and analyze experiments, and become familiar with the documentation and practices important for working in a regulated environment (laboratory notebooks, QA/QC, SOP's, cGMP). Good communication and work-readiness skills are emphasized.
(**Note:** This course is the noncredit equivalent of BIOSC-157.)

BIOSC-859N Foundations in Biotechnology Laboratory
Noncredit: 54 hours of laboratory, per term, P/NP/SP
Corequisite: *BIOSC-857N or BIOSC-157*
This course is designed to provide students with training in the skills and applications commonly used in Biotechnology and Molecular Biology laboratories. It will provide technical practice with analytical instruments, the formulation and use of reagents, and the culture and study of model organisms. Students will learn and apply the Scientific Method, perform data analysis, keep a laboratory notebook according to cGMP, follow Standard Operating Procedures and practice good communication and teamwork skills as they carry out laboratory experiments that reveal foundational concepts of biology, biotechnology, and molecular biology.
(**Note**: This course is the noncredit equivalent of BIOSC-159.)

BIOSC-882N Safety, Efficacy, and Quality in Regulated Products
Noncredit: 36 hours of lecture, per term, P/NP/SP
Advisory: *BIOSC-172 and BIOSC-172L, or BIOSC-157 and BIOSC-159*
This course will introduce students to the concepts of quality control, safety, efficacy and validation as it relates to manufacturing in regulated industries. GLP, cGMP, Quality Assurance and Quality Control laws, regulations, and quality practices associated with life science industries are included. Examples of applications in the biotechnology, cannabis, pharmaceutical, agriculture, food and medical device industries are included.
(**Note:** This course is the noncredit equivalent of BIOSC-182.)

BIOSC-883N Eukaryotic Cell Culture
Noncredit: 18 hours of lecture, 54 hours of laboratory per term, P/NP/SP
Advisory: *BIOSC-159 or BIOSC-172L or Science lab course with skills in measurement, attention to protocol, and documentation of data.*
This course prepares students for employment as cell culture technicians. Students learn aseptic techniques, how to work in a cell culture hood, how to compose mammalian and other eukaryotic cell culture media and the function of each medium component, how to use a hemacytometer and vital staining to count cells and determine viability, how to passage cells, and how to cryopreserve cell cultures. In addition, students will be introduced to concepts of stem cell research, including multi-potent and totipotent cell lines.
(**Note:** This course is the noncredit equivalent of BIOSC-183.)

BIOSC-886N Purification and Analysis of Biological Molecules
Noncredit: 18 hours of lecture, 54 hours of laboratory per term, P/NP/SP
Advisory: *BIOSC-159 or BIOSC-172L or BIOSC-147 or Science lab course with skills in measurement, attention to protocol, and documentation of data*
This course teaches students how to produce, purify, and analyze useful biological molecules, including recombinant proteins. Students will grow organisms for production of biomolecules under carefully controlled and monitored conditions, harvest biomass, and perform extractions. Purification steps include sample preparation, determination of best biomolecule separation method, column chromatography, and large-scale recovery. Analysis of product recovery includes qualitative and quantitative assays, standard curves, and determination of yield. Students isolate a specific protein from a complex cell lysate using affinity and other forms of chromatography, and analyze the results by qualitative and quantitative protein assays. The size and purity of the isolated protein are analyzed by SDS-Polyacrylamide Gel Electrophoresis (SDS-PAGE). Current Good Manufacturing Process (cGMP), Good Laboratory Practice (GLP), and Standard Operating Procedures (SOP's) in relation to these techniques are used throughout.
(**Note:** This course is the noncredit equivalent of BIOSC-186.)

BIOSC-876N Science Communication: Professional Report, Workshop, Public Media
Noncredit: 18-54 hours of lecture, per term, P/NP/SP
Create clear communications products from the data and analysis of life science laboratories. Projects will include workshop presentations for community audiences, preparation of reports for science professionals, development of social media and website products.

Computer Information Systems (CIS)

CIS-198 Introduction to Project Management
3 Units: 54 hours of lecture, per term, SC, DG, CSU
This is an introductory course to Project Management; at the end of this course, students will come away with knowledge in various Project Management methodologies, concepts, processes, and tools. This course will prepare the student with skills to manage a project and to prepare for the CAPM (Certified Associate in Project Management) certification.
(**Note:** This course is the credit equivalent of CIS-898N.)

CIS-199 Project Management - Applications
2 Units: 36 hours of lecture, 18 hours of laboratory, per term, SC, DG, CSU
This course introduces students to the following software tools that are used in Project Management: MS Projects, Jira, and Visio. The software is used to manage a project through the use of Gantt Charts, Scheduling, Timelines, Resources, and given constraints. In addition, this course covers how to create/publish flowcharts, diagrams required in the world of project management. This class does not require prior knowledge of the tools used in this class.
(Note: This course is the credit equivalent of CIS-899N.)

CIS-898N Introduction to Project Management
Noncredit: 54 hours of lecture, per term, P/NP/SP
This is an introductory course to Project Management; at the end of this course, students will come away with knowledge in various Project Management methodologies, concepts, processes, tools. This course will prepare the student with skills to manage a project and to prepare for the CAPM (Certified Associate in Project Management) certification.
(**Note:** This course is the noncredit equivalent of CIS-198.)

CIS-899N Project Management - Applications
Noncredit: 36 hours of lecture, 18 hours of laboratory, per term, P/NP/SP
This course introduces students to the following software tools that are used in Project Management: MS Projects, Jira, and Visio. The software is used to manage a project through the use of Gantt Charts, Scheduling, Timelines, Resources, and given constraints. In addition, this course covers how to create/publish flowcharts, diagrams required in the world of project management. This class does not require prior knowledge of the tools used in this class.
(**Note:** This course is the noncredit equivalent of CIS-199.)

Humanities (HUMAN)

HUMAN-130 Survey of Humanities: Who Are We?
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC
This course will use material from major fields in the humanities, including history, literature, philosophy and the arts, to explore fundamental questions of the field of humanities, such as how do we learn about human experience from its creations? The course will introduce students to a large range of cultures, eras, regions and traditions. Students will be asked to use their evolving understanding to pose questions of their own time and place.

REVISED COURSES

Art (ART)

Note changes: Add advisory
ART-117 Appreciation of Art and Architecture
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC (C-ID: ARTH 100)
Advisory: *ENGL-001A or ENGL-001AX*
This course presents a broad introduction to the visual arts from prehistory to the present, placing the art in historical context. The role of art in the creation of world culture, as well as art processes and the visual vocabulary are examined. This class is designed for non-art majors.

Note changes: Course description. Add advisory option.
ART-118 Multi-Cultural Survey of American Art
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC
Advisory: *ENGL-001A or ENGL-001AX*
This course is a survey of American art focusing on contributions in the visual arts from Asian Americans, Black Americans, European Americans, Indigenous Americans, and Americans of Latin descent.

Note changes: Course title and description. Add advisory option.
ART-190 History of Art: Prehistory through the Middle Ages
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC (C-ID: ARTH110)
Advisory: *ENGL-001A or ENGL-001AX*
This course provides an overview of art and architecture from prehistory through the medieval period.

Note changes: Add advisory option
ART-194 Survey of Asian Arts
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC (C-ID: ARTH 130)
Advisory: *ENGL-001A or ENGL-001AX*
This course provides a select overview of art and architecture from India, Southeast Asia, China, Korea, and Japan from prehistory to modern times.

Note changes: Increase laboratory hours
ART-222 Figure Drawing 2
Prerequisite: *ART-120*
3 Units: 36 hours of lecture, 72 hours of laboratory, per term, SC, DG, CSU, UC
This course is a continuing study of drawing the human figure from observation. Topics include using traditional measuring techniques to create accurate proportions.

Biological Sciences (BIOSC)

Note changes: Course title and description
BIOSC-183 Eukaryotic Cell Culture
2 units: 18 hours of lecture, 54 hours of laboratory, per term, LR, DG, CSU (C-ID: BIOT 230 BX)
Advisory: *BIOSC-159 or BIOSC-172L or Science lab course with skills in measurement, attention to protocol, and documentation of data.*
This course prepares students for employment as cell culture technicians. Students learn aseptic techniques, how to work in a cell culture hood, how to compose mammalian and other eukaryotic cell culture media and the function of each medium component, how to use a hemacytometer and vital staining to count cells and determine viability, how to passage cells, and how to cryopreserve cell cultures. In addition, students will be introduced to concepts of stem cell research, including multi-potent and totipotent cell lines.
(Note: This course is the credit equivalent of BIOSC-883N.)

Note changes: Course title and description
BIOSC-186 Purification and Analysis of Biological Molecules
2 units: 18 hours of lecture, 54 hours of laboratory, per term, LR, DG, CSU (C-ID: BIOT 220 BX)
Advisory: *BIOSC-159 or BIOSC-172L or BIOSC-147 or Science lab course with skills in measurement, attention to protocol, and documentation of data*
This course teaches students how to produce, purify, and analyze useful biological molecules, including recombinant proteins. Students will grow organisms for production of biomolecules under carefully controlled and monitored conditions, harvest biomass, and perform extractions. Purification steps include sample preparation, determination of best biomolecule separation method, column chromatography, and large-scale recovery. Analysis of product recovery includes qualitative and quantitative assays, standard curves, and determination of yield. Students isolate a specific protein from a complex cell lysate using affinity and other forms of chromatography, and analyze the results by qualitative and quantitative protein assays. The size and purity of the isolated protein are analyzed by SDS-Polyacrylamide Gel Electrophoresis (SDS-PAGE). Current Good Manufacturing Process (cGMP), Good Laboratory Practice (GLP), and Standard Operating Procedures (SOP's) in relation to these techniques are used throughout.
(**Note**: This course is the credit equivalent of BIOSC-886N.)

Chemistry (CHEM)

Note changes: Course description
CHEM-121 General College Chemistry II
5 Units: 54 hours of lecture, 108 hours of laboratory, per term, SC, DG, CSU, UC (C-ID: CHEM 120S)
Prerequisite: *CHEM-120 or equivalent*
This course is a continuation of the first semester of general college chemistry, CHEM-120. It covers chemical equilibrium, chemical kinetics and thermodynamics, acid and base equilibrium, solubility equilibria, electrochemistry, special topics in nuclear chemistry, transition metal chemistry, organic and biochemistry.

Early Childhood Education (ECHD)

Note changes: Course description, UC transfer
ECHD-121 Child Growth and Development (DS1)
3 Units: 54 hours of lecture, per term, LR, DG, CSU, UC (C-ID: CDEV 100)
This introductory course examines the major physical, psychosocial, and cognitive/language development milestones for children, both typical and atypical, from conception through adolescence. There will be an emphasis on interactions between maturational process and environmental factors. While studying developmental theory and investigative research methodologies, students will observe children, evaluate individual differences and analyze characteristics of development and various stages.

Note changes: Course description, reduce laboratory hours and course units. Remove one prerequisite. Change co-requisite to prerequisite.

ECHD-290 Student Teaching/Practicum (DS3)
4 Units: 36 hours of lecture, 108 hours of laboratory, per term, LR, DG, CSU (C-ID: ECE 210)
Prerequisite: *ECHD-109, 120, 121, 124, 144, 161, 220, and 133 (ECHD-133 may be taken concurrently)*
In this course the student will practice and demonstrate developmentally appropriate early childhood program planning and teaching competencies under the supervision of ECE/CD faculty and other qualified early education professionals. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment; and knowledge of curriculum content areas will be emphasized as student teachers design, implement and evaluate experiences that promote development and learning for all young children.

English (ENGL)

Note changes: Prerequisite eligibility language.

ENGL-293H Creative Writing
3 Units: 54 hours of composition, per term, SC, DG, CSU, UC (C-ID: ENG 200)
Prerequisite: *Eligibility to enroll in ENGL-001A or ENGL-001AX*
Advisory: *Successful completion of ENGL-001A or ENGL-001AX*
This course introduces the craft of creative writing through the study and analysis of the works of established and peer writers. Students will practice writing in various genres and will be introduced to the workshop method.

Note changes: Prerequisite eligibility language. Grading option

ENGL-220B American Literature: 1850 to Present
3 Units: 54 hours of lecture, per term, SC, DG, CSU, UC (C-ID: ENGL 135)
Prerequisite: *Eligibility for college-level composition ENGL-001A or ENGL-001AX as determined by college assessment or by multiple measures.*
This course introduces students to a wide range of American authors and their relationship to major literary and intellectual movements from the second half of the nineteenth century to the present.

Physics (PHYS)

Note changes: Course description

PHYS-120H General College Physics I (Honors)
4 Units: 54 hours of lecture, 72 hours of laboratory, per term, LR, DG, CSU, UC
Prerequisite: *PHYS-101 (may be taken concurrently); MATH-180 or MATH-190*
This course presents a general study of properties of matter, mechanics, heat and sound, with related laboratory experiments. This course differs significantly from Physics 120 only in the inclusion of calculus-based developments and applications.

REACTIVATED COURSES

Art (ART)

ART-138 Figurative Sculpture 1
3 Units: 36 hours of lecture, 72 hours of laboratory, per term, SC, DG, CSU, UC
Advisory: *ART-120 and ART-102*
Material Fee: *$18 per semester*
This course offers a comprehensive approach to building the figure in clay. Students will explore a range of materials and methods, exploring different types of clay and building techniques. Students will reference various cultural and historical representations of the figure in addition to working from the live model.

ART-238 Figurative Sculpture 2
3 Units: 36 hours of lecture, 72 hours of laboratory, per term, SC, DG, CSU, UC
Prerequisite: *ART-138*
Material Fee: *$18 per semester*
This course is a continuation of the fundamentals and concepts outlined in ART-138. Students will further explore materials, methods, and building techniques. In addition to examining cultural & historical representations of the figure and live models, students will also begin to refine their own personal ideas of aesthetics.

DEACTIVATED COURSES

Music (MUSIC)

MUSIC-158 Beginning Guitar