

**PASADENA CITY COLLEGE
CURRICULUM AND INSTRUCTION COMMITTEE
MINUTES OF MEETING
THURSDAY, NOVEMBER 7, 2019**

CALLED TO ORDER: 1:30 p.m.

CO-CHAIRPERSONS: Sharon Bober
Tamara Knott-Silva

The following Curriculum and Instruction Committee members were present:

FACULTY CHAIRPERSONS

Sharon Bober
Tamara Knott-Silva

INSTRUCTIONAL UNITS

Wendy Lucko, Business, Engineering & Technology
Jeff Hupp, Counseling and Career Services
Manuel Perea, English
Sebrenia Law, Health Sciences
Walter Butler, Library
Richard Abdelkerim, Mathematics and Computer Science
Henry Shin, Performing & Communication Arts
Bakhtawar Bhadha, Social Sciences
Masood Kamandy, Visual Arts & Media Studies

DIVISION DEANS

Julie Kiotas
Lynora Rogacs
Natalie Russell
Isela Ocegueda

MEMBERS EX-OFFICIO

Sharis Amirian, Articulation Officer
Homa Nelson, Classified Senate
Armando Duran, Counseling & Student Success Services
Terry Giugni, Assistant Superintendent/VP, Instruction

VISITORS

Marylynn Aguirre
Jacob Tucker
Sonia Wurst
Li Lei

In accordance with the Ralph M. Brown Act and SB 751, the minutes of the Curriculum and Instruction Committee of Pasadena City College record the votes of all committee members as follows: (1) Members not present are presumed not to have voted; (2) the names of members of minority or abstaining votes are recorded; (3) all other members are presumed to have voted in the majority.

Terry Stoddard
Martha House
Seung Yang
Christine Loritsch
Patricia Michel
Anita Bobich
Brennan Wallace
Carrie Starbird

I. WELCOME

Self-introductions were made.

II. PUBLIC COMMENT

Terry Stoddard, on behalf of the Academic Senate, presented Tammy Knott-Silva with a certificate of appreciation. A video of the Academic Senate vote for the resolution of this certificate was shown.

Richard Abdelkerim read a letter from Xiaodan Leng regarding proposals for MATH 065 and STAT 065.

Richard Abdelkerim read a letter from Jay Cho regarding course proposals for MATH 055 and MATH 055H.

III. APPROVAL OF MINUTES

Meeting Minutes for October 31, 2019.

ON MOTION by Bakhtawar Bhadha and seconded by Richard Abdelkerim, the committee voted to approve the minutes from meeting 10. ABSTAIN = 2 (Walter Butler, Armando Duran)
(Homa Nelson was not present for this vote.)

IV. COMMITTEE DISCUSSION

ON MOTION by Wendy Lucko and seconded by Isela Ocegueda, the committee voted unanimously to reorder the agenda and allow priority discussion and voting of the work experience courses in Visual Arts and Media Studies.

ON MOTION by Terry Giugni and seconded by Natalie Russell, the committee voted to approve the addition of ARCH 070A. NO = 1 (Homa Nelson), ABSTAIN = 3 (Terry Giugni, Armando Duran, Isela Ocegueda)

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted to approve the addition of CIS 070A. ABSTAIN: 3 (Homa Nelson, Isela Ocegueda, Armando Duran)

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted to approve the addition of CIS 070B. ABSTAIN: 3 (Homa Nelson, Isela Ocegueda, Armando Duran)

ON MOTION by Bakhtawar Bhadha and seconded by Wendy Lucko, the committee voted on the addition of CIS 112.

MOTION FAILED – YES = 5 (Julie Kiotas, Manuel Perea, Wendy Lucko, Henry Shin, Lynora Rogacs), NO = 4 (Natalie Russell, Isela Ocegueda, Masood Kamandy, Armando Duran), ABSTAIN = 7 (Sebrenia Law, Bakhtawar Bhadha, Walter Butler, Richard Abdelkerim, Jeff Hupp, Sharis Amirian, Homa Nelson)

ON MOTION by Walter Butler and seconded by Manuel Perea, the committee voted on the addition of CIS 112D.

MOTION FAILED – YES = 3 (Julie Kiotas, Wendy Lucko, Henry Shin), NO = 6 (Natalie Russell, Isela Ocegueda, Lynora Rogacs, Walter Butler, Masood Kamandy, Armando Duran), ABSTAIN = 7 (Sebrenia Law, Bakhtawar Bhadha, Richard Abdelkerim, Jeff Hupp, Sharis Amirian, Homa Nelson, Manuel Perea)

ON MOTION by Lynora Rogacs and seconded by Masood Kamandy, the committee voted unanimously to approve the addition of CIS 194.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the addition of the prerequisite to CIS 194.

ON MOTION by Lynora Rogacs and seconded by Richard Abdelkerim, the committee voted unanimously to approve the addition of Distance Education to CIS 194.

ON MOTION by Walter Butler and seconded by Masood Kamandy, the committee voted unanimously to approve the addition of CIS 011.

ON MOTION by Masood Kamandy and seconded by Walter Butler, the committee voted to approve the addition of CIS 012. NO = 1 (Masood Kamandy), ABSTAIN = 1 (Isela Ocegueda)

ON MOTION by Bakhtawar Bhadha and seconded by Walter Butler, the committee voted to approve the addition of CIS 014. NO = 1 (Masood Kamandy)

ON MOTION by Walter Butler and seconded by Richard Abdelkerim, the committee voted unanimously to approve the updates of Distance Education to CIS 011, CIS 012, and CIS 014.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted to approve the additions of prerequisites to CIS 070A and CIS 070B. ABSTAIN = 1 (Homa Nelson)

ON MOTION by Richard Abdelkerim and seconded by Walter Butler, the committee voted to approve the modification of CIS 016. ABSTAIN = 1 (Masood Kamandy)

ON MOTION by Richard Abdelkerim and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the addition of Distance Education to CIS 016.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modification of CIS 031.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of the prerequisite to CIS 031.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the addition of Distance Education to CIS 031.

ON MOTION by Bakhtawar Bhadha and seconded by Walter Butler, the committee voted unanimously to approve the modification of CIS 036.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modifications of CIS 041 and CIS 042.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the updates of Distance Education to CIS 041 and CIS 042.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of CIS 065.

ON MOTION by Lynora Rogacs and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the update of Distance Education to CIS 065.

ON MOTION by Richard Abdelkerim and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the modification of CIS 164.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the update of Distance Education to CIS 164.

ON MOTION by Lynora Rogacs and seconded by Richard Abdelkerim, the committee voted unanimously to approve the addition to the agenda of the prerequisite modification to CIS 164.

ON MOTION by Lynora Rogacs and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of the prerequisite to CIS 164.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of CIS 192.

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the update of Distance Education to CIS 192.

ON MOTION by Jeff Hupp and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of CIS 193.

ON MOTION by Bakhtawar Bhadha and seconded by Julie Kiotas, the committee voted unanimously to approve the modification of the prerequisite to CIS 193.

ON MOTION by Bakhtawar Bhadha and seconded by Masood Kamandy, the committee voted unanimously to approve the update of Distance Education to CIS 193.

ON MOTION by Masood Kamandy and seconded by Jeff Hupp, the committee voted unanimously to approve the modification of CIS 197.

ON MOTION by Bakhtawar Bhadha and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of the prerequisite to CIS 197.

ON MOTION by Jeff Hupp and seconded by Sharis Amirian, the committee voted unanimously to approve the modification of Distance Education to CIS 197.

ON MOTION by Richard Abdelkerim and seconded by Manuel Perea, the committee voted unanimously to approve revisiting the earlier vote for CIS 112.

ON MOTION by Richard Abdelkerim and seconded by Sebrenia Law, the committee voted to approve the addition of CIS 112. NO = 1 (Isela Ocegueda), ABSTAIN = 2 (Homa Nelson, Armando Duran)

ON MOTION by Richard Abdelkerim and seconded by Sebrenia Law, the committee voted to approve revisiting the earlier vote for CIS 112D. ABSTAIN = 2 (Homa Nelson, Armando Duran)

ON MOTION by Bakhtawar Bhadha and seconded by Richard Abdelkerim, the committee voted to approve the addition of CIS 112D. NO = 1 (Isela Ocegueda), ABSTAIN = 2 (Homa Nelson, Armando Duran)

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted to approve the addition of the prerequisite to CIS 112. ABSTAIN = 1 (Homa Nelson)

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted to approve the addition of the prerequisite to CIS 112D. ABSTAIN = 1 (Homa Nelson)

ON MOTION by Richard Abdelkerim and seconded by Jeff Hupp, the committee voted unanimously to approve the additions of Distance Education to CIS 112 and CIS 112D.

ON MOTION by Wendy Lucko and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the modification of COMPUTER INFORMATION SYSTEMS – CISCO ENTERPRISE NETWORK ASSOCIATE Occupational Skills Certificate (from COMPUTER INFORMATION SYSTEMS - CCNA ROUTING & SWITCHING PREPARATION).

ON MOTION by Masood Kamandy and seconded by Julie Kiotas, the committee voted unanimously to approve the modifications of COMPUTER INFORMATION SYSTEMS – CYBERSECURITY AS/Certificate of Achievement, COMPUTER INFORMATION SYSTEMS – FULL STACK WEB DEVELOPMENT AS/Certificate of Achievement (from COMPUTER INFORMATION SYSTEMS - WEB DEVELOPMENT), and COMPUTER INFORMATION SYSTEMS – HELP DESK / USER SUPPORT AS/Certificate of Achievement.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modification of COMPUTER INFORMATION SYSTEMS – SOFTWARE DEVELOPMENT AS/Certificate of Achievement (from COMPUTER INFORMATION SYSTEMS – PROGRAMMING).

ON MOTION by Julie Kiotas and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of COMPUTER INFORMATION SYSTEMS – SYSTEM AND NETWORK ADMINISTRATION AS/Certificate of Achievement.

ON MOTION by Masood Kamandy and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the additions of MACH 121 and MACH 131.

ON MOTION by Walter Butler and seconded by Jeff Hupp, the committee voted unanimously to approve the additions of the prerequisites to MACH 121 and MACH 131.

ON MOTION by Masood Kamandy and seconded by Wendy Lucko, the committee voted unanimously to approve the addition of COMPUTER NUMERICAL CONTROL (CNC) MACHINE TOOL OPERATOR AS/Certificate of Achievement.

ON MOTION by Lynora Rogacs and seconded by Masood Kamandy, the committee voted unanimously to approve the modifications of AJ 010 and AJ 012.

ON MOTION by Masood Kamandy and seconded by Jeff Hupp, the committee voted unanimously to approve the additions of Distance Education to AJ 010 and AJ 012.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modifications of AUTO 141, AUTO 144, AUTO 145, AUTO 146, AUTO 147, and AUTO 148.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modification of AUTO 140A.

ON MOTION by Richard Abdelkerim and seconded by Walter Hupp, the committee voted unanimously to approve the deletion of the prerequisite of AUTO 140A.

ON MOTION by Julie Kiotas and seconded by Masood Kamandy, the committee voted unanimously to approve the addition to the agenda of the Distance Education modification to BUS 014A.

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modification of BUS 014A.

ON MOTION by Masood Kamandy and seconded by Wendy Lucko, the committee voted unanimously to approve the modification of Distance Education to BUS 014A.

ON MOTION by Walter Butler and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modification of STAT 015.

ON MOTION by Richard Abdelkerim and seconded by Jeff Hupp, the committee voted to approve the modification of the prerequisite to STAT 015.

ON MOTION by Masood Kamandy and seconded by Jeff Hupp, the committee voted unanimously to approve the update of Distance Education to STAT 015.

ON MOTION by Masood Kamandy and seconded by Jeff Hupp, the committee voted unanimously to approve the modifications of ENGR 002 and ENGR 018.

ON MOTION by Masood Kamandy and seconded by Wendy Lucko, the committee voted unanimously to approve the modifications of the prerequisites to ENGR 002 and ENGR 018.

ON MOTION by Masood Kamandy and seconded by Sebrenia Law, the committee voted unanimously to approve the deletions of DLT 109, DLT 113A, DLT 113B, DLT 114A, DLT 114B, DLT 115, DLT 116A, DLT 116B, DLT 116C, DLT 116D, DLT 117, DLT 118A, DLT 118B, DLT 119A, DLT 119B, DLT 124, DLT 125, and DLT 126.

ON MOTION by Wendy Lucko and seconded by Sebrenia Law, the committee voted unanimously to approve the deletions of NURS 041 and NURS 041L.

ON MOTION by Wendy Lucko and seconded by Walter Hupp, the committee voted unanimously to approve the deletion of DENTAL LABORATORY TECHNOLOGY AS/Certificate of Achievement.

ON MOTION by Richard Abdelkerim and seconded by Jeff Hupp, the committee voted to take a 5-minute break.

ON MOTION by Masood Kamandy and seconded by Jeff Hupp, the committee voted unanimously to vote on the additions of ARCH 070B, ART 070A, ART 070B, CINE 070A, CINE, O70B, DMA 099A, DMA 099B, FASH 070A, FASH 070B, JOUR 070A, JOUR 070B, PHOT 070A, and PHOT 070B as a group. (Homa Nelson was not present for this vote.)

ON MOTION by Sharis Amirian and seconded by Richard Abdelkerim, the committee voted unanimously to approve the additions of ARCH 070B, ART 070A, ART 070B, CINE 070A, CINE, O70B, DMA 099A, DMA 099B, FASH 070A, FASH 070B, JOUR 070A, JOUR 070B, PHOT 070A, and PHOT 070B. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Bakhtawar Bhadha, the committee voted unanimously to approve the additions of prerequisites for ARCH 070A, ARCH 070B, ART 070A, ART 070B, CINE 070A, CINE, O70B, DMA 099A, DMA 099B, FASH 070A, FASH 070B, JOUR 070A, JOUR 070B, PHOT 070A, and PHOT 070B. (Homa Nelson was not present for this vote.)

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the additions of PHOT 042A and PHOT 042B. (Homa Nelson was not present for this vote.)

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modifications of JOUR 042A (from JOUR 023) and JOUR 042B (from JOUR 022). (Homa Nelson was not present for this vote.)

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted unanimously to approve the modifications of ART 005, ART 013, ART 015, ART 018, ART 023A, ART 023B, ART 023C, and ART 024. (Homa Nelson was not present for this vote.) (Homa Nelson was not present for this vote.)

ON MOTION by Jeff Hupp and seconded by Richard Abdelkerim, the committee voted unanimously to approve the update of Distance Education to ART 005. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Sebrenia Law, the committee voted unanimously to approve the modification of STUDIO ART AS/Certificate of Achievement. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Masood Kamandy, the committee voted unanimously to approve the modifications of BIOL 071A, BIOL 071B, and BIOL 071C. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Sebrenia Law, the committee voted unanimously to approve the modifications of BIOL 171A, BIOL 171B, and BIOL 171C. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Wendy Lucko, the committee voted unanimously to approve the modifications of GEOG 001, GEOG 001L, GEOG 002, GEOG 003, and GEOG 004. (Homa Nelson was not present for this vote.)

ON MOTION by Richard Abdelkerim and seconded by Jeff Hupp, the committee voted unanimously to approve the updates of Distance Education to GEOG 001, GEOG 001L, GEOG 002, GEOG 003, and GEOG 004. (Homa Nelson was not present for this vote.)

ON MOTION by Masood Kamandy and seconded by Richard Abdelkerim, the committee voted to approve the modification of ASSOCIATE IN ARTS IN NATURAL SCIENCES. (Homa Nelson was not present for this vote.)

ON MOTION by Sebrenia Law and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of MATH 065. (Homa Nelson was not present for this vote.)
ON MOTION by Jeff Hupp and seconded by Masood Kamandy, the committee voted unanimously to approve the modification of STAT 065. (Homa Nelson was not present for this vote.)

V. ANNOUNCEMENTS

Tammy will miss everyone very much and believes C&I is the best committee at PCC.

VI. ADJOURNMENT

ON MOTION by Sharis Amirian and seconded by Sebrenia Law, the meeting adjourned at 4:16 p.m.

ADDENDUM

BUSINESS AND ENGINEERING TECHNOLOGY

ADDITIONS – Effective Summer 2020

CIS 070A WORK EXPERIENCE IN INFORMATION TECHNOLOGY (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a paid position in the field of information technology.

Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This is a new discipline specific work experience course. To create Vocational Work experience courses (per Title 5, section 55252), the unit count will change from 6 to 8 units maximum.

CIS 070B WORK EXPERIENCE IN INFORMATION TECHNOLOGY (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in an unpaid position in the field of information technology. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This is a new discipline specific work experience course. To create Vocational Work Experience courses (per Title 5, section 55252), the unit count will change from 6 to 8 units maximum.

CIS 112 ADVANCED PROGRAMMING USING PYTHON

3 units

Prerequisite: CIS 012.

Application development using advanced Python programming techniques. Topics include the advanced Object-Oriented programming, advanced functions and modules, packages, process management, network programming, web programming, GUI (Graphical User Interface) programming, and testing principles and techniques. Preparation for the Python Institute Certified Associate in Python Programming (PCAP) and Python Institute Certified Professional in Python Programming (PCPP) exams Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: To offer an advanced Python programming course that aligns with industry certifications; Python Institute Certified Associate in Python Programming (PCAP) and Python Institute Certified Professional in Python Programming (PCPP). Addition of Form D.

CIS 112D DATA STRUCTURES AND ALGORITHMS USING PYTHON

3 units

Prerequisite: CIS 112.

Emphasizes the choice and application of data structures and efficient algorithms in implementing applications, covering the most commonly used data structures such as linked lists, stacks and queues, search trees, maps, hashing, priority queues, sorting, and graphs. Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: To introduce data structures and related patterns and algorithms to help students understand computing and better formulate and apply object-oriented programming to solve problems. Addition of Form D.

CIS 194 CLIENT-SIDE WEB DEVELOPMENT USING JAVASCRIPT LIBRARIES

3 units

Prerequisite: CIS 193.

Client-side web application programming using JavaScript libraries. Focuses on React's declarative user interfaces, testing Redux, React router, React Redux, JSX, data flow, usage with React, async actions, async flow, and React middleware to create effective client-side web applications on the latest web stacks and techniques. Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: To align this course with the Facebook's UI (User Interface) web stack and its certification pathway to become a successful client-side web developer. This course leads to a variety of web development activities including front-end scripting, debugging, unit testing, client-server communication, and interactions with web services to deploy dynamic, efficient content to the web.

MACH 121 MASTERCAM ADVANCED

3 units

Prerequisite: MACH 120.

Advanced use of Mastercam as it relates to machinability and fixtures and tool setups. Covers 3D wireframe, surface geometry creation and solid creation, surface finish and roughing toolpaths, advanced surface high speed toolpaths, STL Stock creation and its use in solid model verification. Machine simulation is used to verify G-Code for collisions between the part, the tool and machine components. Total of 36 hours lecture and 72 hours laboratory.

Grade Mode: L, A

Rationale: This Course Proposal is in response to recommendations from the Machine Shop Advisory Board and Community Industry Partners to develop the Certificates being offered to better align Courses with Industry Standards and Employment Qualifications.

MACH 131 CNC MILL MACHINING ADVANCED

3 units

Prerequisite: MACH 130.

Production of machining operations on CAM software to produce numerical control programming (GCode) in order to automate numerically controlled machinery (CNC). Topics include advanced CNC milling techniques, faster production speeds, higher level of precision, fabrication of complex components, and 4th-axis rotary indexing. Total of 27 hours lecture and 81 hours laboratory.

Grade Mode: L, A

Rationale: This Course Proposal is in response to recommendations from the Machine Shop Advisory Board and Community Industry Partners to develop the Certificates being offered to better align Courses with Industry Standards and Employment Qualifications.

ADDITION – Effective Summer 2020

COMPUTER NUMERICAL CONTROL (CNC) MACHINE TOOL OPERATOR – AS/Certificate of Achievement

22 units

The curriculum prepares students for basic to advanced training in conventional machining, computer numerical programming and operation, advanced operations. The program qualifies students with the central skills necessary for employment in the machining industry. The curriculum includes; programming, setup, operation, code verification, tooling and toolholders, work offsets and tool offsets.

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

Required Courses

MACH 101 - BEGINNING METALWORKING SKILLS (3.0 Units)

MACH 110 - BLUEPRINT READING (1.0 Units)

MACH 120 - MASTERCAM (3.0 Units)

MACH 121 - MASTERCAM ADVANCED (3.0 Units)

MACH 130 - CNC MILL MACHINING (3.0 Units)

MACH 131 - CNC MILL MACHINING ADVANCED (3.0 Units)

MACH 135 - CNC LATHE MACHINING (3.0 Units)

MACH 136 - CNC LATHE MACHINING ADVANCED (3.0 Units)

Rationale: This Certificate program prepares the student to work in the machine technology field in the area of CNC programming and CNC machining. Our industry partners indicate that the need to fully train students in preparation for these position is needed. In addition, students need to have the knowledge of common manufacturing methods as they advance into management positions.

MODIFICATIONS

MODIFICATION – Addition of Distance Education – Effective Summer 2020

AJ 010 INTRODUCTION TO THE ADMINISTRATION OF JUSTICE

3 units

History and philosophy of administration of justice in the United States of America from its inception to its role in a culturally diverse society. Identification and explanation of the various components of the criminal justice system; theories of crime, punishment and rehabilitation; examination of the contemporaneous hiring processes of law enforcement agencies, including but not limited to preparation of the application, oral board analysis and overall examination of the system requirements. Total of 54 hours lecture.

Transfer Credit: CSU; UC. *C-ID: AJ 110

Grade Mode: L, A

Rationale: Adding a new Form D.

MODIFICATION – MOIs, assignments, Addition of Distance Education – Effective Summer 2020

AJ 012 CONCEPTS OF CRIMINAL LAW

3 units

Prerequisite: Enrollment in or completion of AJ 010.

Historical development of criminal law; legal research methods; classification of crime through critical thinking analysis as seen through the eyes of the investigator and the trier of fact; in-depth analysis of homicide and related crimes against persons; survey of property crimes and drug and alcohol related offenses; thorough exposure to legal concepts for those considering careers in law enforcement and related legal professions. Total of 54 hours lecture.

Transfer Credit: CSU; UC. *C-ID AJ 120

Grade Mode: L, A

Rationale: Adding Form D. Modifications to Assignments, MOIs.

MODIFICATION – catalog description, prerequisite (removal of Enrollment in or completion of Engl 400 and Math 402), MOIs, MOEs – Effective Summer 2020

AUTO 140A VEHICLE MAINTENANCE

4 units

Intended for the incumbent worker, re-entry personal, and/or persons seeking a career change into the automotive service industry. Foundation course in the Maintenance and Light Repair (MLR) Program. Focus on developing workplace skills (detailed multi-point inspection and fluid maintenance) on select vehicle subsystems. Appropriate lab activities are included. Total of 54 hours lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. Prerequisite removal was agreed upon by both campuses. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus College curriculum is identical to this currently. Modification to catalog description, MOIs, MOEs.

MODIFICATION – MOIs, MOEs – Effective Summer 2020

AUTO 141 ENGINE MECHANICAL MAINTENANCE AND LIGHT REPAIR

2 units

Prerequisite: AUTO 140A or one year industry experience.

Intended for the incumbent worker, re-entry personal, and/or persons seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) program. Essential engine theory, inspection, diagnosis, service and repair. Engine inspection and measurements with an emphasis on in-vehicle repairs. Total of 27 hours lecture and 27 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modifications to MOIs, MOEs.

MODIFICATION – MOIs, MOEs – Effective Summer 2020

AUTO 144 AUTOMOTIVE CHASSIS MAINTENANCE AND LIGHT REPAIR

4 units

Prerequisite: AUTO 140A.

Intended for the incumbent worker, re-entry personal, and/or persons seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) program. Essential chassis system theory, inspection, diagnosis, service and repair of the following undercar systems: steering, suspension, alignment, wheels and tires. Total of 54 hours lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modification of MOIs, MOEs.

MODIFICATION – catalog description, MOIs, MOEs – Effective Summer 2020

AUTO 145 AUTOMOTIVE BRAKES MAINTENANCE AND LIGHT REPAIR

3 units

Prerequisite: AUTO 140A.

Intended for the incumbent worker, re-entry person or person seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) curriculum. Focus on developing workplace skills allowing a student to competently perform detailed brake inspections and repairs on disc, drum and parking brake systems. Appropriate lab activities are included. Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modification to catalog description, MOIs, MOEs.

MODIFICATION – MOIs, MOEs – Effective Summer 2020

AUTO 146 AUTOMOTIVE ELECTRICAL SYSTEMS MAINTENANCE AND LIGHT REPAIR

4 units

Prerequisite: AUTO 140A.

Intended for the incumbent worker, re-entry personal, and/or persons seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) program. Essential electrical and electronic systems theory, including inspection, diagnosis, service and repair of specific electrical systems (battery, starting systems, charging systems, lighting systems, gauges, instrument-panel warning lights and power accessories). Total of 54 hours lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modification to MOIs, MOEs.

MODIFICATION – MOIs, MOEs – Effective Summer 2020

**AUTO 147 AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING
MAINTENANCE AND
LIGHT REPAIR**

2 units

Prerequisite: AUTO 140A.

Intended for the incumbent worker, re-entry personal, and/or persons seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) program. Essential heating, ventilation, and air conditioning (HVAC) system theory, inspection, maintenance and light repair. Total of 18 hours lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modification to MOIs, MOEs.

MODIFICATION – MOIs, MOEs – Effective Summer 2020

AUTO 148 ENGINE PERFORMANCE MAINTENANCE AND LIGHT REPAIR

4 units

Prerequisite: AUTO 140A.

Intended for the incumbent worker, re-entry person or person seeking a career change into the automotive service industry. Part of the Maintenance and Light Repair (MLR) curriculum. Essential engine management system theory, along with inspection, diagnosis, service and repair of the following systems: Ignition, air and fuel delivery, electronic engine controls, and auxiliary emission controls. Total of 54 hours of lecture and 54 hours laboratory.

Grade Mode: L, A

Rationale: This course was reviewed by all full-time auto faculty (SDiaz, Dcook, WLucko) for completeness and any updates needed. 2 year CTE review completed Fall 2019. This course is part of a

joint college LAOCRC project with Citrus College. Curriculum changes and modifications are restricted. Citrus curriculum is identical to this currently. Modifications to MOIs, MOEs.

MODIFICATION – SLOs, SPOs, CCOs, MOIs, MOEs, prerequisites (removal Math 133B & Math 134B) contact hours (from 72 lec to 54 lec/54 lab), NCN (decrease from 40 to 35), update to Distance Education – Effective Summer 2020

BUS 014A MATHEMATICAL ANALYSIS FOR BUSINESS-FINITE

4 units

Prerequisites: MATH 131 or 150 or placement based on the Mathematics placement process

Algebraic and geometric concepts applied to finding solutions of problems in business, economics, and social sciences. Special emphasis on mathematics of finance, linear and quadratic functions, break-even analysis, supply/demand curves, systems of linear equations and inequalities, matrices, linear programming, sets and Venn diagrams, combinatorial techniques, and probability. Total of 54 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC. C-ID: MATH 130

Grade Mode: L

Rationale: The COR, the Prerequisite Form B Supplemental Form, and the Distance Learning Supplemental Form have been reviewed and updated where appropriate.

The following changes have been made:

1) Course Hours have been changed from 72 lecture hours to 54 lecture hours/54 lab hours. This course remains as a 4 unit course. Student class time plus homework time remains the same (216 hours), but the instructor to student contact time increases with having lecture/lab.

Data from the Office of Institutional Effectiveness indicates that a little more than half of Bus 14A and Stat 15 students had to take the prerequisite more than once in order to earn at least a C grade. Then, about half of those students were successful in passing Bus 14A or Stat 15 the first time. Data also show that students waited about one year after they take the prerequisite before entering into Bus 14A or Stat 15.

With the advent of AB 705, the Math Division is no longer offering the Intermediate Algebra prerequisite courses. The Business Math faculty believe that by reducing the lecture hours and adding the lab hours will provide the time that is needed for students to build the Intermediate Algebra skills that they will need to be successful in Bus 14A and/or Stat 15. Additionally, the lab hours will better support the Excel and other technology used in the class which, in turn, reinforces this knowledge used in the other courses within the ADT for Business Administration and other certificates in the BET Division.

2) Registration capacity has been changed from 40 to 35 to better serve the students in the business math course.

3) Summer 2020 is the semester of first offering.

4) Language including PCC Connect has been added to the Instructor/Student section of the Distance Ed form.

5) Language has been modified in the SLOs, SPOs, CCOs, MOIs, and MOEs to illustrate the connection between them all and the Course Description.

6) Removal of Prerequisites: Math 133B and Math 134B as these courses have been archived.

7) Distance Ed Form has been updated according to edits made in the COR and the suggestions of DE department.

MODIFICATION – MOIs, MOEs, texts, Distance Education update – Effective Summer 2020

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+ certification exams. Total of 54 hours lecture and 54 hours laboratory.

Transfer Credit: CSU. C-ID: ITIS 110

Grade Mode: L

Rationale: To update EMP, MOIs, MOEs, certificate, textbook, and Form D.

MODIFICATION – catalog description, SLOs, SPOs, CCOs, MOIs, MOEs, assignments, texts,

Distance Education update – Effective Summer 2020

CIS 012 INTRODUCTION TO PROGRAMMING USING PYTHON

3 units

Fundamental concepts and models of application development using Python programming language. Coverage of structured and object-oriented programming principles and techniques. Topics include the basic concepts of program design, variables, declarations, statements, expressions, basic I/O (input and output), flow control structures, functions and modules, lists (arrays), tuples, dictionaries, file access, classes and objects, class attributes and methods, inheritance, abstraction, encapsulation, and polymorphism. Preparation for the Microsoft Technology Associate (MTA): Introduction to Programming using Python, Python Institute Certified Entry-Level Python Programmer (PCEP), and Python Institute Certified Associate in Python Programming (PCAP) exams. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L

Rationale: To align this course with industry certifications; Microsoft Technology Associate (MTA): Introduction to Programming using Python, Python Institute Certified Entry-Level Python Programmer (PCEP), and Python Institute Certified Associate in Python Programming (PCAP). Request for C-ID number ITIS 130 to align this course with CSULA's CIS 2830 – Introduction to Application Programming. To update course title, EMP, SLOs, SPOs, CCOs, MOIs, MOEs, assignments, catalog description, certificate, textbook, other materials, and Form D.

MODIFICATION – NCN (increase from 28 to 30), Distance Education update – Effective Summer 2020

CIS 014 C++ PROGRAMMING

3 units

Prerequisite: CIS 012 or equivalent.

Application development using C++ programming language. Coverage of object-oriented programming principles and techniques. Topics include C++ basics, control structures, functions, arrays, pointers, classes, overloading, data abstraction, encapsulation, inheritance, polymorphism, virtual functions, file processing, templates, exceptions, and STL (Standard Template Library). Preparation for the C++

Institute's C++ Certified Associate Programmer (CPA) and C++ Certified Professional Programmer (CPP) exams. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L

Rationale: To update EMP, NCN (increased from 28 to 30), certificate, Form B, and Form D.

MODIFICATION – SLOs, NCN (increase from 28 to 30), addition of Distance Education – Effective Summer 2020

CIS 016 JAVA PROGRAMMING

3 units

Prerequisite: CIS 012 or equivalent.

Application development using Java programming language. Coverage of object-oriented programming principles and techniques. Topics include Java basics, control structures, arrays, classes, methods, overloading, encapsulation, inheritance, polymorphism, collections, Lambda expressions, exceptions, Java I/O, Java API, and database applications. Preparation for the Oracle Certified Associate (OCA) – Java SE Programmer and Oracle Certified Professional (OCP) – Java SE Programmer exams. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L

Rationale: To update EMP, SLOs, NCN (increase from 28 to 30), certificate, and Form B. To add Form D.

MODIFICATION – prerequisite / recommended prep (moved CIS 011), addition of Distance Ed – Effective Summer 2020

CIS 031 INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS

3 units

Recommended Preparation: 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; UC credit under review.

Grade Mode: L

Rationale: To update EMP, remove prerequisite and move to recommended preparation, certificates, and Form B. Request for C-ID ITIS 180. To add Form D.

MODIFICATION – SLOs, NCN (increase from 28 to 30) – Effective Summer 2020

CIS 036 VISUAL BASIC .NET PROGRAMMING

3 units

Prerequisite: CIS 012 or equivalent.

Application development using Visual Basic .NET programming language. Coverage of object-oriented programming principles and techniques. Topics include Visual Basic .NET basics, control structures, arrays, classes and objects, methods, overloading, encapsulation, inheritance, polymorphism, interfaces, generics, delegates, exceptions, file processing, Windows Forms, web applications, ADO.NET, and components. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L

Rationale: To update EMP, SLOs, NCN (increased from 28 to 30), certificate, and Form B.

MODIFICATION – course title, catalog description, CCOs, MOEs, NCN (increase from 28 to 30), text, Distance Education update – Effective Summer 2020

CIS 041 CCNA: INTRODUCTION TO NETWORKS

3 units

Recommended Preparation: CIS 011.

Architecture, structure, functions, components, and models of the Internet and other computer networks. Principles and structure of IP (Internet Protocol) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for further study of computer networks. Use of the OSI (Open Systems Interconnection) and TCP/IP (Transmission Control Protocol / Internet Protocol) layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. Preparation for the CompTIA Network+, Cisco CCT Routing & Switching, and Cisco CCNA certification exams. No credit if taken after CIS 161. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU

Grade Mode: L

Rationale: Cisco Networking Academy has released new CCNA curriculum. This proposal aligns this course with new CCNA 1 curriculum. To update course title, EMP, CCOs, MOEs, NCN (increase from 18 to 20), catalog description, certificate, textbook, and Form D.

MODIFICATION – course title, SLOs, SPOs, CCOs, MOIs, MOEs, NCN (increase from 18 to 20), text, Distance Education update – Effective Summer 2020

CIS 042 CCNA: ROUTING AND SWITCHING ESSENTIALS

3 units

Prerequisite: CIS 041.

Configuring and troubleshooting enterprise networks. Topics include: static routing, Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Virtual LANs (VLANs), Inter-VLAN routing, Spanning Tree Protocol (STP), Ether Channel, Dynamic Host Configuration Protocol (DHCP), First-Hop redundancy Protocol (FHRP), Access Control Lists (ACLs), Network Address Translation (NAT), and Wireless LAN (WLAN). Preparation for the Cisco CCT Routing & Switching and Cisco

CCNA certification exams. No credit if taken after CIS 162. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU

Grade Mode: L

Rationale: Cisco Networking Academy has released new CCNA curriculum. This proposal aligns this course with new CCNA 2 curriculum. To update course title, EMP, SLOs, SPOs, CCOs, MOIs, MOEs, NCN (was 18 now 20), certificate, textbook, and Form D.

MODIFICATION – course title, addition of Distance Education – Effective Summer 2020

CIS 065 DIGITAL FORENSICS FUNDAMENTALS

3 units

Prerequisite: CIS 061 or equivalent.

Methods used to properly conduct a computer forensics investigation based on objectives of the International Association of Computer Investigative Specialists (IACIS) certification. Topics covered include an overview of computer forensics as a profession, the computer investigation process, ethics, operating systems boot processes and disk structures, data acquisition and analysis; technical writing, and computer forensics tools. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC credit under review.

Grade Mode: L

Rationale: To update course title, EMP, and certificate. To add Form D.

MODIFICATION – course title, catalog description, prerequisite (from CIS 163 to CIS 042), SPOs, CCOs, assignment, NCN (increase from 18 to 20), texts, Distance Education update – Effective Summer 2020

CIS 164 CCNA: ENTERPRISE NETWORKING AND SECURITY

3 units

Prerequisite: CIS 042.

Configuring and troubleshooting enterprise networks. Topics include: Point-to-Point Protocol (PPP), PPP over Ethernet (PPPoE), Virtual Private Networks (VPNs), Generic Routing Encapsulation (GRE), advanced Open Shortest Path First (OSPF) configurations, advanced Access Control Lists (ACLs) configurations, advanced Network Address Translation (NAT) configurations, network security, network management, network design, network troubleshooting, network virtualization, and network automation. Preparation for the Cisco CCNA certification exam. Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: Cisco Networking Academy has released new CCNA curriculum. This proposal aligns this course with new CCNA 3 curriculum. To update course title, EMP, SPOs, CCOs, assignment, catalog description, prerequisite, NCN (was 18 now 20), certificate, textbook, Form B, and Form D.

Prerequisite change: from CIS 163 to CIS 042. Cisco Networking Academy has reduced the number of courses (from 4 to 3) for new CCNA curriculum. CIS 163 is no longer needed.

MODIFICATION – catalog description, recommended preparation (addition of CIS 012), SLOs, SPOs, CCOs, MOIs, MOEs, assignments, grade mode, texts, Distance Education update – Effective Summer 2020

CIS 192 INTRODUCTION TO WEB DEVELOPMENT

3 units

Recommended Preparation: CIS 012.

The essentials of HTML5, CSS3, and JavaScript including their functionalities, syntax, and advanced techniques to create web content and designs that can be adapt to various device form factors.

Coverage includes HTML5 elements and APIs, CSS3 syntax and advanced techniques, code validation, form creation, mobile design for browsers and apps, and JavaScript and its application.

Preparation for the CIW Advanced HTML5 and CSS3 Specialist certification. Total of 36 hours lecture and 54 hours laboratory. No credit if taken after GRFX 192.

Grade Mode: L

Rationale: To align this course with the CIW Advanced HTML5 and CSS3 Specialist certification. The University of California has approved the CIW Advanced HTML5 and CSS3 Specialist certification on the 2016-2017 A-G Course List as a College-Preparatory Elective ("g"). To update EMP, SLOs, SPOs, CCOs, MOIs, MOEs, assignments, catalog description, recommended preparation, grading option, certificates, textbook, Form B, and Form D.

MODIFICATION – course title, catalog description, prerequisite (addition of CIS 192), SLOs, SPOs, CCOs, MOIs, MOEs, assignments, texts, Distance Education update – Effective Summer 2020

CIS 193 CLIENT-SIDE WEB DEVELOPMENT USING JAVASCRIPT

3 units

Prerequisites: CIS 012 and CIS 192.

Client-side web application programming using JavaScript. Topics include JavaScript basics, control structures, arrays, object-oriented programming, functions, methods, expressions, Document Object Model (DOM), forms, debugging, event handling, cookie creation, security, web API (Application Programming Interface), libraries and frameworks, and AJAX. Preparation for the CIW JavaScript Specialist Certification. Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: To align this course with the CIW JavaScript Specialist certification. The University of California has approved the CIW JavaScript Specialist certification on the 2016-2017 A-G Course List as a College-Preparatory Elective ("g"). To update course title, SLOs, SPOs, CCOs, MOIs, MOEs, assignments, catalog description, prerequisite, certificates, textbook, Form B, and Form D.

MODIFICATION – course title, catalog description, prerequisite (from CIS 012 to CIS 031 and CIS 194), SLOs, SPOs, CCOs, MOIs, MOEs, assignments, texts, Distance Education update – Effective Summer 2020

CIS 197 SERVER-SIDE WEB DEVELOPMENT

3 units

Prerequisites: CIS 031 and CIS 194.

Server-side web application programming using various server-side technologies. Coverage of Server-side web development principles and techniques. Utilization of PHP and Node.js to building database-driven web sites that incorporate lightweight, efficient, and secure web services and applications.

Preparation for the Zend Certified PHP Engineer and OpenJS Node.js Application Developer exams.
Total of 36 hours lecture and 54 hours laboratory.

Grade Mode: L

Rationale: To align this course with industry certifications; Zend Certified PHP Engineer and OpenJS Node.js Application Developer. To update course title, EMP, SLOs, SPOs, CCOs, MOIs, MOEs, assignments, catalog description, prerequisite, certificates, textbook, Form B, and Form D.

MODIFICATION – catalog description, prerequisite (from MATH 007A to MATH 008), SPOs, CCOs, texts – Effective Summer 2020

ENGR 002 ENGINEERING GRAPHICS

3 units

Prerequisite: MATH 008 or MATH 009.

Introduction to principles of engineering drawings in visually communicating engineering design and an introduction to computer--aided design (CAD). Engineering design projects with an emphasis on the development of visualization skills, orthographic projections, mechanical dimensioning and tolerancing practices, problem-solving, critical thinking, collaboration and communication across multiple industries, software and prototyping technologies. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Updating COR to align with C-ID ENGR 150. Modification of CCOs, slight grammatical change to catalog description, SPOs, texts, Modification of Prereqs (remove MATH 007A, add MATH 008)

MODIFICATION – CCOs, SLOs, SPOs, contact hours (from 54 lec to 36 lec/54 lab) – Effective Summer 2020

ENGR 018 INTRODUCTION TO NUMERICAL ANALYSIS

3 units

Prerequisite: MATH 005A or MATH 005AH

Introduction to numerical analysis, computational methods, computer programming, and problem-solving using MATLAB. Provides a working knowledge of the computer as a tool to solve engineering and scientific problems. Understanding of programming and problem-solving allowing use of these tools and techniques to extend MATLAB knowledge. Total of 36 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Updated to align to C-ID descriptor ENGR 220. Modification of CCOs, SLOs, SPOs. Contact hours changed from 54 lec to 36 lec/54 lab (no unit change).

MODIFICATION – prerequisite, CCOs, MOIs, MOEs, NCN (decrease 40 to 35), contact hours (from 72 lec to 54 lec/54 lab), texts – Effective Summer 2020

STAT 015 STATISTICS FOR BUSINESS AND ECONOMICS

4 units

Prerequisite: MATH 131 or MATH 150 or placement based on the mathematics placement process.

Descriptive and inferential statistics. Collection, analysis, and presentation of business and economic data using probability techniques, hypothesis testing, and predictive strategies to facilitate decision-making. Topics include measures of central tendency, and deviation; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi square, and t-tests; and, application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. No credit if taken after STAT 018, 050, or 050H. Total of 54 hours lecture and 54 hours laboratory.

Transfer Credit: CSU; UC credit limitations. See counselor. C-ID: MATH 110

Grade Mode: L

Rationale: The COR, the Prerequisite Form B Supplemental Form, and the Distance Learning Supplemental Form have been reviewed and updated where appropriate.

The following changes have been made:

1) Course Hours have been changed from 72 lecture hours to 54 lecture hours/54 lab hours. This course remains as a 4 unit course. Student class time plus homework time remains the same (216 hours), but the instructor to student contact time increases with having lecture/lab.

Data from the Office of Institutional Effectiveness indicates that a little more than half of Bus 14A and Stat 15 students had to take the prerequisite more than once in order to earn at least a C grade. Then, about half of those students were successful in passing Bus 14A or Stat 15 the first time. Data also show that students waited about one year after they take the prerequisite before entering into Bus 14A or Stat 15.

With the advent of AB 705, the Math Division is no longer offering the Intermediate Algebra prerequisite courses. The Business Math faculty believe that by reducing the lecture hours and adding the lab hours will provide the time that is needed for students to build the Intermediate Algebra skills that they will need to be successful in Bus 14A and/or Stat 15. Additionally, the lab hours will better support the Excel and other technology used in the class which, in turn, reinforces this knowledge used in the other courses within the ADT for Business Administration and other certificates in the BET Division.

2) The prerequisite of Bus 14A has been removed to give greater access to students wanting to take Stat 15.

3) Registration capacity has been changed from 40 to 35 to better serve the students in the business math course.

4) Summer 2020 is the semester of first offering.

5) Language including PCC Connect has been added to the Distance Ed Form.

6) Textbooks updated - more recent editions found.

7) CCOs, MOIs and MOEs have been updated based on the suggestions of Tech Review.

8) The assignment MOIs and MOEs on the Distance Ed form have been updated based on the suggestions of Tech Review.

MODIFICATION – program name, description, units (from 12 to 9), required courses – Effective Summer 2020

COMPUTER INFORMATION SYSTEMS - CISCO ENTERPRISE NETWORK ASSOCIATE OSC
9 units

This Cisco Networking Academy's Cisco Certified Network Associate (CCNA) curriculum provides students with necessary skills to seek entry-level employment in the field of Information Technology. Instruction includes training in installing, configuring, maintaining, and troubleshooting Cisco routers and switches in a small to enterprise routed and switched networking environment.

An Occupational Skills Certificate is awarded upon completion of all required courses with a grade of C or better.

CIS 041 - CCNA: INTRODUCTION TO NETWORKS (3.0 Units)

CIS 042 - CCNA: ROUTING AND SWITCHING ESSENTIALS (3.0 Units)

CIS 164 - CCNA: ENTERPRISE NETWORKING AND SECURITY (3.0 Units)

Rationale: Formerly known as COMPUTER INFORMATION SYSTEMS - CCNA ROUTING & SWITCHING PREPARATION. To update program name, EMP, description, units, and required courses.

Required courses change: Since this certificate includes courses for the Cisco Networking Academy, CCNA curriculum, in which the required courses for this certification have been reduced (from 4 to 3), CIS 163 is no longer needed; therefore, there is a unit reduction from 12 to 9 units.

MODIFICATION – description, required courses, units (from 21-23 to 25-26) – Effective Summer 2020

COMPUTER INFORMATION SYSTEMS – CYBERSECURITY – AS/Certificate of Achievement
25-26 units

This cybersecurity program prepares students with necessary skills to seek employment in the field of Information Technology to administer enterprise network security. Instruction includes training in basic enterprise system and network administration with an emphasis on system and network security, and computer forensics. Students are exposed to a wide variety of security analysis/defensive tools, and students implement these tools. Upon completion of coursework, students will have the foundation needed to pursue industry certifications such as Python Institute Certified Entry-Level Python Programmer (PCEP), CompTIA A+, CompTIA Network+, CompTIA Security+, EC-Council Certified Ethical Hacker, Cisco CCT Routing & Switching, Cisco CCNA CyberOps, and Microsoft MCSA Windows Server or CompTIA Linux+/LPI Linux Administrator.

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

CIS 011 - INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS (4.0 Units)

CIS 012 - INTRODUCTION TO PROGRAMMING USING PYTHON (3.0 Units)

CIS 041 - CCNA: INTRODUCTION TO NETWORKS (3.0 Units)

CIS 042 - CCNA: ROUTING AND SWITCHING ESSENTIALS (3.0 Units)

CIS 045 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 1 (4.0 Units)

OR CIS 040 - UNIX/LINUX ADMINISTRATION (3.0 Units)

CIS 061 - INTRODUCTION TO INFORMATION SYSTEMS SECURITY (3.0 Units)

CIS 063 - INTRODUCTION TO CYBERSECURITY: ETHICAL HACKING (3.0 Units)

CIS 065 - DIGITAL FORENSICS FUNDAMENTALS (3.0 Units)

Rationale: To update description, EMP, required courses, and required units.

MODIFICATION – program name, required courses, required electives, units (from 18-19 to 18)–
Effective Summer 2020

COMPUTER INFORMATION SYSTEMS - FULL STACK WEB DEVELOPMENT – AS/Certificate Achievement

18 units

This Full Stack Web Development curriculum prepares students with necessary skills to seek entry-level employment in client-side and server-side web development. Instruction includes development, testing, deployment, and maintenance of secure web applications using programming languages including and not limited to HTML, CSS, JavaScript, jQuery, Bootstrap, React, Angular.js, Node.js, PHP, SQL, and Python. Upon completion of coursework, students will have the foundation needed to pursue industry certifications including and not limited to Python institute's Certified Associate in Python Programming (PCAP), CIW Advanced HTML5 and CSS3 Specialist, CIW JavaScript Specialist certification, OpenJS Node.js Application Developer, and Zend Certified PHP Engineer.

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

Required Courses

CIS 012 - INTRODUCTION TO PROGRAMMING USING PYTHON (3.0 Units)

CIS 031 - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS (3.0 Units)

CIS 192 - INTRODUCTION TO WEB DEVELOPMENT (3.0 Units)

CIS 193 - CLIENT-SIDE WEB DEVELOPMENT USING JAVASCRIPT (3.0 Units)

CIS 194 - CLIENT-SIDE WEB DEVELOPMENT USING JAVASCRIPT LIBRARIES (3.0 Units)

CIS 197 - SERVER-SIDE WEB DEVELOPMENT (3.0 Units)

Rationale: To update program name, EMP, SLOs, required units, required courses, and required electives. Formerly known as COMPUTER INFORMATION SYSTEMS - WEB DEVELOPMENT.

MODIFICATION – description, required courses, TOP code (from 0707.30 to 0708.20.) – Effective Summer 2020

COMPUTER INFORMATION SYSTEMS - HELP DESK / USER SUPPORT – AS/Certificate of Achievement

20-21 units

This help desk / user support program prepares students with necessary skills to seek employment in help desk / user support in the field of Information Technology. Instruction includes training in computer hardware, software, Microsoft Windows server operating systems and Microsoft Windows client operating systems in a networked environment with an emphasis on Local Area Networks (LANs) and network security. Upon completion of coursework, students will have the foundation needed to pursue industry certifications including and not limited to CompTIA Network+, CompTIA Security+, Cisco CCT Routing & Switching, Cisco CCNA CyberOps, and Microsoft MCSA Windows Server.

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

Required Courses

CIS 011 - INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS (4.0 Units)

CIS 041 - CCNA: INTRODUCTION TO NETWORKS (3.0 Units)

CIS 042 - CCNA: ROUTING AND SWITCHING ESSENTIALS (3.0 Units)

CIS 045 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 1 (4.0 Units)
CIS 061 - INTRODUCTION TO INFORMATION SYSTEMS SECURITY (3.0 Units)

Required Electives

Select 1 course - 3 - 4

CIS 012 - INTRODUCTION TO PROGRAMMING USING PYTHON (3.0 Units)
CIS 031 - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS (3.0 Units)
CIS 040 - UNIX/LINUX ADMINISTRATION (3.0 Units)
CIS 063 - INTRODUCTION TO CYBERSECURITY: ETHICAL HACKING (3.0 Units)
CIS 065 - DIGITAL FORENSICS FUNDAMENTALS (3.0 Units)
CIS 146 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 2 (4.0 Units)
CIS 151 - VCP-DCV: VMWARE VSPHERE ADMINISTRATION (3.0 Units)
CIS 164 - CCNA: ENTERPRISE NETWORKING AND SECURITY (3.0 Units)

Rationale: To update description, EMP, and required courses. To update TOP code from 0707.30 to 0708.20.

MODIFICATION – program name, description, SLOs, required units (from 18-19 to 18), required courses, required electives – Effective Summer 2020

COMPUTER INFORMATION SYSTEMS - SOFTWARE DEVELOPMENT – AS/Certificate of Achievement

18 units

This Software Development curriculum prepares students with necessary skills to seek entry-level employment in software development. Instruction includes development, testing, and maintenance of applications using programming languages including and not limited to Python, C++, Java, and SQL. Upon completion of coursework, students will have the foundation needed to pursue industry certifications including and not limited to Python institute's Certified Associate in Python Programming (PCAP) and Certified Professional in Python Programming (PCPP), C++ Institute's C++ Certified Associate Programmer (CPA) and C++ Certified Professional Programmer (CPP), Oracle Certified Associate (OCA) – Java SE Programmer, and Oracle Certified Professional (OCP) – Java SE Programmer.

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

Required Courses

CIS 012 - INTRODUCTION TO PROGRAMMING USING PYTHON (3.0 Units)
CIS 014 - C++ PROGRAMMING (3.0 Units)
CIS 016 - JAVA PROGRAMMING (3.0 Units)
CIS 031 - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS (3.0 Units)
CIS 112 - ADVANCED PROGRAMMING USING PYTHON (3.0 Units)
CIS 112D - DATA STRUCTURES AND ALGORITHMS USING PYTHON (3.0 Units)

Rationale: To update program name, EMP, description, SLOs, required units, required courses, and required electives. Formerly known as COMPUTER INFORMATION SYSTEMS - PROGRAMMING.

MODIFICATION – program name, description, required courses – Effective Summer 2020
COMPUTER INFORMATION SYSTEMS - SYSTEM AND NETWORK ADMINISTRATION –
AS/Certificate of Achievement

18-20 units

This system and network administration program prepares students with necessary skills to seek entry-level employment in the field of Information Technology to administer an enterprise network infrastructure and/or a network operating system infrastructure. Instruction includes training in installing, configuring, maintaining, and troubleshooting network devices and end devices with an emphasis on Cisco enterprise network infrastructure administration. Upon completion of coursework, students will have the foundation needed to pursue industry certifications including and not limited to CompTIA Network+, CompTIA Security+, Cisco CCNA, Cisco CCNA CyberOps, and Microsoft MCSA Windows Server or CompTIA Linux+/LPI Linux Administrator.

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

Required Courses

CIS 040 - UNIX/LINUX ADMINISTRATION (3.0 Units)

OR CIS 045 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 1 (4.0 Units)

CIS 041 - CCNA: INTRODUCTION TO NETWORKS (3.0 Units)

CIS 042 - CCNA: ROUTING AND SWITCHING ESSENTIALS (3.0 Units)

CIS 061 - INTRODUCTION TO INFORMATION SYSTEMS SECURITY (3.0 Units)

CIS 164 - CCNA: ENTERPRISE NETWORKING AND SECURITY (3.0 Units)

Required Electives

Select 1 course - 3 - 4

CIS 011 - INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS (4.0 Units)

CIS 012 - INTRODUCTION TO PROGRAMMING USING PYTHON (3.0 Units)

CIS 031 - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS (3.0 Units)

CIS 040 - UNIX/LINUX ADMINISTRATION (3.0 Units)

CIS 045 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 1 (4.0 Units)

CIS 063 - INTRODUCTION TO CYBERSECURITY: ETHICAL HACKING (3.0 Units)

CIS 065 - DIGITAL FORENSICS FUNDAMENTALS (3.0 Units)

CIS 137 - MCSA: MICROSOFT WINDOWS CLIENT OPERATING SYSTEMS (3.0 Units)

CIS 146 - MCSA: MICROSOFT WINDOWS SYSTEM ADMINISTRATION 2 (4.0 Units)

CIS 151 - VCP-DCV: VMWARE VSPHERE ADMINISTRATION (3.0 Units)

CIS 170 - CISCO IP TELEPHONY ADMINISTRATION (4.0 Units)

Rationale: Formerly known as COMPUTER INFORMATION SYSTEMS - SYSTEM AND NETWORK ADMINISTRATOR. To update program name, EMP, description, and required courses. Required courses change: Since this certificate includes courses for the Cisco Networking Academy, CCNA curriculum, in which the required courses for this certification have been reduced (from 4 to 3), CIS 163 is no longer needed. To maintain the number of units for this certificate, CIS 163 is no

longer needed and replaced with CIS 061. The updated list of required CCNA courses are CIS 041, 042, and 164.

HEALTH SCIENCES

DELETIONS – Effective Summer 2020

DLT 109 DENTAL MATERIALS

2 units

DLT 113A DENTURE TECHNIQUES

4 units

DLT 113B DENTURE TECHNIQUES

4 units

DLT 114A CROWN AND BRIDGE

4 units

DLT 114B CROWN AND BRIDGE

4 units

DLT 116A BEGINNING DENTAL ANATOMY

1 ½ units

DLT 116B INTERMEDIATE DENTAL ANATOMY

1 ½ units

DLT 116C ADVANCED DENTAL ANATOMY

2 ½ units

DLT 116D HIGHLY ADVANCED DENTAL ANATOMY

2 ½ units

DLT 117 ORTHODONTICS AND PEDODONTICS

2 units

DLT 118A CERAMICS

4 units

DLT 118B ADVANCED CERAMICS

6 units

DLT 119A PARTIAL DENTURES

4 units

DLT 119B PARTIAL DENTURES

2 units

DLT 124 DENTAL LABORATORY MANAGEMENT

2 units

DLT 126 TRANSITION TO DENTAL LABORATORY INDUSTRY

3 ½ units

Rationale: All of the above named DLT courses should be archived/deleted as they are no longer needed in the PCC Catalog. All students have completed the necessary courses before retiring the DLT Program.

NURS 041 PEDIATRIC NURSING

1 unit

Rationale: Pediatric nursing theory content will be moved into 4th semester N53 Advanced Medical Surgical Nursing of Adult and Pediatric Clients. This meets industry standard of having Pediatric Nursing in an advanced nursing course. This change will also allow the RN program to decrease program units from 39 units to 36 units. This change is required by the CA Board of Registered Nursing.

NURS 041L PEDIATRIC NURSING LAB

2 units

Rationale: Pediatric nursing clinical/lab content will be moved into 4th semester N53L Advanced Medical Surgical Nursing of Adult and Pediatric Clients Clinical/Lab. This meets industry standard of having Pediatric Nursing clinical/lab in an advanced nursing course. This change will also allow the RN program to decrease program units from 39 units to 36 units. This change is required by the CA Board of Registered Nursing.

DENTAL LABORATORY TECHNOLOGY – AS/Certificate of Achievement

61 units

Rationale: The Dental Laboratory Technology (DLT) Program is now renamed and fully approved and implemented the Restorative Dental Technology (RDT) Program. All courses with the DLT prefix are also now courses with an RDT prefix.

MATHEMATICS AND COMPUTER SCIENCE DIVISION

ADDITION – Effective Summer 2020

MATH 065 SCIENTIFIC COMPUTING FOR MATHEMATICS

1 unit

Exploration of the potential of applied programming methods for mathematics. Fundamentals of scripting including generative plots, graphs, animations, computations, and simulations in a variety of projects with an emphasis on using the open-sourced libraries and packages specifically for mathematics. For students who would like to explore applied coding in the context of mathematics but open to all students. Total of 54 hours laboratory.

Transfer Credit: CSU: UC credit under review.

Grade Mode: L, P

Rationale: Since coding skills are becoming foundational for students pursuing any opportunities in the STEM fields, learning well-developed coding skills will help to create upward mobility, bringing students from the lowest 20 percentile of the job market to the highest. The objective of this series of Scientific

Computing courses is to expose students to applied programming in a STEM discipline at the earliest entry point in their academic program. We believe this curriculum will excite students while developing

industry desired coding skills, which will in turn help reduce equity gaps and transform our students' lives by opening the door to employment with higher, more livable wages.

This series of Scientific Computing courses are geared towards STEM students as a gateway into applied programming. The individual courses are designed with an integrated curriculum to provide an

intersection of applied programming with discipline specific STEM content. In these courses, students will explore STEM topics using a beginner-friendly, problem-based, and applied programming approach. The learning outcomes from these courses include the development of computational thinking, critical thinking, and problem-solving skills highly desired in industry.

Scientific Computing Course Titles w/ Faculty Co-Authors

MATH 065 - Scientific Computing for Mathematics; (Xiaodan Leng)

STAT 065 - Scientific Computing for Statistics; (Xiaodan Leng)

BIOL 065 - Scientific Computing for Biology; (TBD)

PHYS 065 - Scientific Computing for Physics; (Miriam Hartman)

GEOG 065 - Scientific Computing for GIS; (Brennan Wallace)

CHEM 065 - Scientific Computing for Chemistry; (Melissa Anderson)

Researcher/Facilitator

Masood Kamandy

Equivalent Courses at the UC and Cal States

California State University, Chanel Island, MATH 448 - Scientific Computing

California State University, Chanel Island, MECH 208 - Introductory to Technical Computing

California State University, Long Beach, MATH 173 - Programming in Mathematical Software

California State University, San Bernardino CSE 129 - Scientific Computing and Society

University of California Irvine, MATH 9 - Introduction to Programming for Numerical Analysis

San Jose State University, MATH 50 - Scientific Computing

San Jose State University METR 50 - Scientific Computing

San Jose State University, METR 51 - Scientific Computing

Sonoma State University, MATH 180 - Computing for Mathematics and Science

Grossmont College, MATH 150 - Introduction to Computer Programming Applications in Mathematics

San Diego City College, MATH 107 - Introduction to Scientific Programming

San Diego City College, MATH 107L - Introduction to Scientific Programming Laboratory

The University of California, ENGIN 7 - Introduction to Computer Programming for Scientists and Engineers

University of California, Los Angeles, STATS 20 - Introduction to Statistical Programming with R

University of California, Los Angeles, MATH 50 - MATLAB Programming

STAT 065 SCIENTIFIC COMPUTING FOR STATISTICS

1 unit

Exploration of the potential of applied programming methods for statistics. Fundamentals of scripting for statistical analysis including generative tables, plots, graphs, animations, computations, and simulations in a variety of projects with an emphasis on using the open-sourced libraries and packages specifically for statistics. For students who would like to explore applied coding in the context of statistics. Total of 54 hours laboratory.

Transfer Credit: CSU; UC credit under review.

Grade Mode: L,

Rationale: Since coding skills are becoming foundational for students pursuing any opportunities in the STEM fields, learning well-developed coding skills will help to create upward mobility, bringing students from the lowest 20 percentile of the job market to the highest. The objective of this series of Scientific

Computing courses is to expose students to applied programming in a STEM discipline at the earliest entry point in their academic program. We believe this curriculum will excite students while developing

industry desired coding skills, which will in turn help reduce equity gaps and transform our students' lives by opening the door to employment with higher, more livable wages.

This series of Scientific Computing courses are geared towards STEM students as a gateway into applied programming. The individual courses are designed with an integrated curriculum to provide an intersection of applied programming with discipline specific STEM content. In these courses, students will explore STEM topics using a beginner-friendly, problem-based, and applied programming approach. The learning outcomes from these courses include the development of computational thinking, critical thinking, and problem-solving skills highly desired in industry.

Scientific Computing Course Titles w/ Faculty Co-Authors

MATH 065 - Scientific Computing for Mathematics; (Xiaodan Leng)

STAT 065 - Scientific Computing for Statistics; (Xiaodan Leng)

BIOL 065 - Scientific Computing for Biology; (TBD)

PHYS 065 - Scientific Computing for Physics; (Miriam Hartman)

GEOG 065 - Scientific Computing for GIS; (Brennan Wallace)

CHEM 065 - Scientific Computing for Chemistry; (Melissa Anderson)

Researcher/Facilitator

Masood Kamandy

Equivalent Courses at the UC and Cal States

San Francisco State University, Math 324 - Probability and Statistics with Computing

University of California, Irvine, STATS 68 - Statistical Computing and Exploratory Data Analysis

University of California, Los Angeles, STATS 20 - Introduction to Statistical Programming with R

University of California, Los Angeles, MATH 50 - MATLAB Programming

NATURAL SCIENCES DIVISION

MODIFICATIONS

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020

BIOL 071A EXPLORING TOPICS IN BIOLOGY

3 units

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 54 hours lecture.

Transfer Credit: CSU.

Grade Mode: L, A, P

Rationale: The proposal for the BIOL 071A Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs.

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020

BIOL 071B EXPLORING TOPICS IN BIOLOGY

1 unit

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 18 hours lecture.

Transfer Credit: CSU.
Grade Mode: L, A, P

Rationale: The proposal for the BIOL 071B Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs. This course will serve to shorten the time for curriculum delivery of new topics.

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020
BIOL 071C EXPLORING TOPICS IN BIOLOGY

1 unit

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 18 hours lecture and 18 hours laboratory.

Transfer Credit: CSU.
Grade Mode: L, A, P

Rationale: The proposal for the BIOL 071C Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs. This course will serve to shorten the time for curriculum delivery of new topics.

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020
BIOL 171A EXPLORING TOPICS IN BIOLOGY

3 units

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 54 hours lecture.

Grade Mode: L, A, P

Rationale: The proposal for the BIOL 171A Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs. This course will serve to shorten the time for curriculum delivery of new topics.

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020
BIOL 171B EXPLORING TOPICS IN BIOLOGY

1 unit

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 18 hours lecture.

Grade Mode: L, A, P

Rationale: The proposal for the BIOL 171B Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs. This course will serve to shorten the time for curriculum delivery of new topics.

MODIFICATION – course description, SLOs, SPOs, CCOs, MOEs – Effective Summer 2020
BIOL 171C EXPLORING TOPICS IN BIOLOGY

1 unit

Exploratory course: Specific topic identified in Schedule of Classes.

Lecture focusing on topics of current and general interest. Total of 18 hours lecture and 18 hours laboratory.

Grade Mode: L, A, P

Rationale: The proposal for the BIOL 171C Exploring Topics in Biology course provides updated information on the following: the course description, SLOs, SPOs, CCOs, and MOEs. This course will serve to shorten the time for curriculum delivery of new topics.

MODIFICATION – text, Distance Education update – Effective Summer 2020

GEOG 001 PHYSICAL GEOGRAPHY

3 units

Introduction to the natural environment from a geographical perspective. Topics include geographic techniques, and their use to study air, water, land and life forms, with emphasis on their interconnections, interactions and world location patterns. Total of 54 hours lecture.

Transfer Credit: CSU, UC. C-ID: GEOG 110

Grade Mode: L, A, P

Rationale: 1. Reviewed course outline. Updated textbook editions. 2. Updated form D.

MODIFICATION – text, Distance Education update – Effective Summer 2020

GEOG 001L PHYSICAL GEOGRAPHY LABORATORY

1 unit

Prerequisite: Enrollment in or completion of GEOG 001.

Observation and interpretation of meteorological phenomena including statistical analysis of climatic data. Cartographic techniques and map interpretation. Global patterns of the biosphere, hydrosphere and lithosphere, showing their regional interrelationships. Required instructional trips. Total of 54 hours laboratory.

Transfer Credit: CSU, UC. C-ID: GEOG 111

Grade Mode: L, A, P

Rationale: Course reviewed, textbook updated. Form D updated.

MODIFICATION – MOEs, MOIs, text, Distance Education update – Effective Summer 2020

GEOG 002 CULTURAL GEOGRAPHY

3 units

Study of diverse human populations, their cultural origins, diffusion and contemporary spatial expressions. Topics include: demography, languages and religions, urbanization and landscape modification, political units and nationalism, and economic systems and development. Total of 54 hours lecture.

Transfer Credit: CSU; UC. C-ID: GEOG 120

Grade Mode: L, A, P

Rationale: Course reviewed, textbook updated. Modification of MOEs, MOIs. Form D updated.

MODIFICATION – MOIs, MOEs, assignments, text, Distance Education update – Effective Summer 2020

GEOG 003 WORLD REGIONAL GEOGRAPHY

3 units

Introductory study of the world's countries, cultures and cultural regions from a geographic perspective. Focus on individual countries, with topics including history, culture, society, economy, government, environment, and current issues. Total of 54 hours lecture.

Transfer Credit: CSU; UC. *C-ID: GEOG 125

Grade Mode: L, A, P

Rationale: Reviewed Course, Updated MOE's and Textbook Editions. Modified assignments, MOIs, - Updated Form D - Date and Accessibility paragraph.

MODIFICATION – MOEs, texts, TOP code, Distance Education update – Effective Summer 2020

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. No credit if taken after GEOL 024. Total of 54 hours lecture.

Transfer credit: CSU; UC credit under review. C-ID: GEOG 130

Grade Mode: L, A, P

Rationale: Reviewed course. Updated MOE's and Textbook Editions. Updated Form D - Date and Accessibility paragraph. Changed TOP code from GEOLOGY to GEOGRAPHY.

MODIFICATION – description, course lists, SLOs – Effective Summer 2020

Associate in Arts in Natural Sciences

18 units

Responsible Divisions: Natural Sciences, Mathematics

This area of emphasis offers a broad and interdisciplinary foundation in the sciences necessary for continued training at the upper division (or advanced) level for many bachelor degree programs in the natural sciences including biology, chemistry, environmental science, geology, mathematics, plant science, physics, and many others. It is a starting point for students who are preparing for careers in, health sciences, medicine, business, agriculture, education, and government, where scientific and technical skills are in great demand.

PLEASE NOTE: The courses that universities and colleges require for transfer vary. When selecting courses for transfer purposes, students should consult with Counseling Services to determine the particular transfer requirements of specific transfer institutions.

Requirements for the area of emphasis (18 units minimum)

Courses must be completed with a grade of C or better. All courses must be numbered 1-99.

Students must complete 18 units with at least 3 units in three of the following five categories listed below:

Required Courses

Biological Sciences -

ANTH 001 - PHYSICAL ANTHROPOLOGY (3.0 Units)
ANTH 001L - LABORATORY IN PHYSICAL ANTHROPOLOGY (1.0 Units)
ANTH 001H - HONORS PHYSICAL ANTHROPOLOGY (3.0 Units)
ANAT 025 - HUMAN ANATOMY (4.0 Units)
BIOL 002 - ANIMAL BIOLOGY (4.0 Units)
BIOL 003 - HUMAN BIOLOGY (4.0 Units)
BIOL 004 - PLANT BIOLOGY (4.0 Units)
BIOL 005A - TOPICS IN APPLIED BOTANY/URBAN TREE IDENTIFICATION & BIOLOGY (1.0 Units)
BIOL 005B - TOPICS IN APPLIED BOTANY: BOTANY FOR SCHOOL GARDENS (1.0 Units)
BIOL 010A - CELLULAR BIOLOGY, GENETICS AND EVOLUTION (5.0 Units)
BIOL 010B - THE DIVERSITY OF LIFE ON EARTH: STRUCTURE, FUNCTION AND ECOLOGY (5.0 Units)
BIOL 010C - GENETICS (3.0 Units)
BIOL 011 - GENERAL BIOLOGY (4.0 Units)
BIOL 011H - HONORS GENERAL BIOLOGY (4.0 Units)
BIOL 014 - FIELD BIOLOGY (4.0 Units)
BIOL 016 - MARINE BIOLOGY (4.0 Units)
BIOL 025 - FIELD STUDIES (1.0 Units)
BIOL 026 - BIOLOGY FIELD STUDIES (2.0 Units)
BIOL 028 - INTRODUCTION TO BIOINFORMATICS (3.0 Units)
BIOL 038 - CELL AND MOLECULAR BIOLOGY (4.0 Units)
BIOL 039 - MODERN HUMAN GENETICS (4.0 Units)
MICR 002 - MICROBIOLOGY (4.0 Units)
NUTR 011 - HUMAN NUTRITION (3.0 Units)
PYSO 001 - HUMAN PHYSIOLOGY (4.0 Units)
PSYC 002 - ELEMENTARY PHYSIOLOGICAL PSYCHOLOGY (3.0 Units)
BIOL 005C - TOPICS IN APPLIED BIOLOGY - MEDICINAL PLANTS (1.0 Units)

Chemistry -

CHEM 001A - GENERAL CHEMISTRY AND CHEMICAL ANALYSIS (5.0 Units)
CHEM 001B - GENERAL CHEMISTRY AND CHEMICAL ANALYSIS (5.0 Units)
CHEM 002A - CHEMISTRY - GENERAL, ORGANIC AND BIOCHEMISTRY (4.0 Units)
CHEM 002B - CHEMISTRY-GENERAL, ORGANIC AND BIOCHEMISTRY (4.0 Units)
CHEM 008A - ORGANIC CHEMISTRY (5.0 Units)
CHEM 008B - ORGANIC CHEMISTRY (5.0 Units)
CHEM 022 - INTRODUCTORY CHEMISTRY (4.0 Units)

Environmental Sciences -

ENVS 001 - INTRODUCTION TO ENVIRONMENTAL SCIENCE (4.0 Units)
ENVS 002 - HUMAN IMPACT ON THE ENVIRONMENT (3.0 Units)
ENVS 003 - CHEMISTRY AND THE ENVIRONMENT (4.0 Units)

ENVS 030 - ENVIRONMENTAL FIELD INVESTIGATIONS (2.0 Units)
ENVS 040 - ENVIRONMENTAL FIELD LABORATORY (1.0 Units)
ENVS 010 - ENVIRONMENTAL HORTICULTURE (3.0 Units)
ENVS 011 - SOIL SCIENCE (3.0 Units)
ENVS 012 - PLANT MATERIALS AND USAGE I (3.0 Units)

Geosciences -

GEOG 001 - PHYSICAL GEOGRAPHY (3.0 Units)
GEOG 001L - PHYSICAL GEOGRAPHY LABORATORY (1.0 Units)
GEOG 004 - WEATHER AND CLIMATE (3.0 Units)
GEOL 001 - PHYSICAL GEOLOGY (4.0 Units)
GEOL 001F - PHYSICAL GEOLOGY FIELD STUDIES (1.0 Units)
GEOL 002 - HISTORICAL GEOLOGY (4.0 Units)
GEOL 002F - HISTORICAL GEOLOGY FIELD STUDIES (1.0 Units)
GEOL 003 - EARTH AND SPACE SCIENCE (4.0 Units)
GEOL 003F - EARTH AND SPACE SCIENCE FIELD LABORATORY (1.0 Units)
GEOL 004 - GEOLOGY OF CALIFORNIA (3.0 Units)
GEOL 006 - MINERALOGY (4.0 Units)
GEOL 012 - PHYSICAL OCEANOGRAPHY (3.0 Units)
GEOL 012F - PHYSICAL OCEANOGRAPHY FIELD STUDIES (1.0 Units)
GEOL 012L - PHYSICAL OCEANOGRAPHY LABORATORY (1.0 Units)
GEOL 022 - THE AGE OF DINOSAURS (3.0 Units)
GEOL 023 - NATURAL DISASTERS (3.0 Units)
GEOL 030A - CHANNEL ISLANDS - COASTAL CALIFORNIA (2.0 Units)
GEOL 030C - COAST RANGES - SAN ANDREAS FAULT (2.0 Units)
GEOL 030D - SIERRA NEVADA (2.0 Units)
GEOL 030E - OWENS VALLEY - DEATH VALLEY (2.0 Units)
GEOL 030F - GEOLOGICAL FIELD INVESTIGATION-ROCKY MOUNTAINS (2.0 Units)
GEOL 030G - KLAMATH MOUNTAINS - NORTHERN CALIFORNIA (2.0 Units)
GEOL 030H - INTERNATIONAL STUDY AREAS (2.0 Units)
GEOL 030I - PROBLEMS IN STRUCTURAL GEOLOGY (2.0 Units)
GEOL 030J - COLORADO PLATEAU (2.0 Units)
GEOL 030K - PROBLEMS IN REGIONAL STRATIGRAPHY (2.0 Units)
GEOL 030L - APPLICATIONS OF GLOBAL POSITIONAL SYSTEM (2.0 Units)
GEOL 030M - GEOLOGICAL FIELD INVESTIGATION - PACIFIC RIM /PACIFIC ISLANDS (2.0 Units)
GEOL 040 - GEOLOGICAL FIELD LABORATORY (1.0 Units)
GEOG 011 - INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS AND TECHNIQUES, WITH LAB (3.0 Units)
GEOG 012 - MAP INTERPRETATION AND SPATIAL ANALYSIS (3.0 Units)
GEOG 013 - DATA ACQUISITION AND MANAGEMENT (3.0 Units)

Mathematics & Statistics -

MATH 003 - COLLEGE ALGEBRA FOR STEM (5.0 Units)
MATH 005A - SINGLE VARIABLE CALCULUS I (5.0 Units)

MATH 005AH - HONORS SINGLE VARIABLE CALCULUS I (5.0 Units)
MATH 005B - SINGLE VARIABLE CALCULUS II (5.0 Units)
MATH 005BH - HONORS SINGLE VARIABLE CALCULUS II (5.0 Units)
MATH 005C - MULTIVARIABLE CALCULUS (5.0 Units)
MATH 005CH - HONORS MULTIVARIABLE CALCULUS (5.0 Units)
MATH 007A - MATHEMATICAL ANALYSIS 1 (4.0 Units)
MATH 007B - MATHEMATICAL ANALYSIS 2 (4.0 Units)
MATH 009 - PRECALCULUS MATHEMATICS (5.0 Units)
MATH 010 - LINEAR ALGEBRA AND APPLICATIONS (5.0 Units)
MATH 022 - DISCRETE MATHEMATICS (4.0 Units)
MATH 055 - DIFFERENTIAL EQUATIONS (5.0 Units)
STAT 050 - ELEMENTARY STATISTICS (4.0 Units)
STAT 050H - HONORS ELEMENTARY STATISTICS (4.0 Units)

Physics & Physical Sciences -

ASTR 001 - ELEMENTARY ASTRONOMY (4.0 Units)
ASTR 012 - DESCRIPTIVE INTRODUCTION TO ASTRONOMY (3.0 Units)
PHSC 003 - PHYSICAL SCIENCES (3.0 Units)
PHSC 003L - LABORATORY FOR PHYSICAL SCIENCE (1.0 Units)
PHYS 001A - PHYSICS FOR SCIENTISTS AND ENGINEERS I: MECHANICS (5.0 Units)
PHYS 001B - GENERAL PHYSICS (5.0 Units)
PHYS 001C - GENERAL PHYSICS (5.0 Units)
PHYS 001D - GENERAL PHYSICS (5.0 Units)
PHYS 002A - GENERAL PHYSICS (4.0 Units)
PHYS 002B - GENERAL PHYSICS (4.0 Units)
PHYS 010 - DESCRIPTIVE INTRODUCTION TO PHYSICS (3.0 Units)
PHYS 010L - DESCRIPTIVE PHYSICS IN THE LABORATORY (1.0 Units)
PHYS 031A - GENERAL PHYSICS (5.0 Units)
PHYS 031B - GENERAL PHYSICS (5.0 Units)

Rationale: This is an update for the degree. The course lists, SLOs, and description have been updated.

VISUAL ARTS AND MEDIA STUDIES DIVISION

ADDITION – Effective Summer 2020

ARCH 070A WORK EXPERIENCE/INTERNSHIP IN ARCHITECTURE (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitations: Instructor approval.

Provides students on-the-job learning in a paid architecture position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

ARCH 070B WORK EXPERIENCE/INTERNSHIP IN ARCHITECTURE (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitations: Instructor approval.

Provides students on-the-job learning in an unpaid architecture position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course

ART 070A WORK EXPERIENCE/INTERNSHIP IN ART & DESIGN (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitations: Instructor approval.

Provides students on-the-job learning in an art and design paid position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees.

Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

ART 070B WORK EXPERIENCE/INTERNSHIP IN ART & DESIGN (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in an unpaid art and design position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

CINE 070A WORK EXPERIENCE/INTERNSHIP IN CINEMA (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a paid cinema position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

CINE 070B WORK EXPERIENCE/INTERNSHIP IN CINEMA (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in an unpaid cinema position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8; update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

DMA 099A WORK EXPERIENCE/INTERNSHIP IN DESIGN MEDIA ART (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a paid design media art position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8; update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

DMA 099B WORK EXPERIENCE/INTERNSHIP IN DESIGN MEDIA ART (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in an unpaid design media art position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program,

should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

FASH 070A WORK EXPERIENCE/INTERNSHIP IN FASHION (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a fashion paid position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

FASH 070B WORK EXPERIENCE/INTERNSHIP IN FASHION (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a fashion unpaid position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work

Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

JOUR 070A WORK EXPERIENCE/INTERNSHIP IN JOURNALISM (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a paid journalism position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year.

The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

JOUR 070B WORK EXPERIENCE/INTERNSHIP IN JOURNALISM (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in an unpaid journalism position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition.

This includes changing the maximum number of units from 6 to 8, update grade mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

PHOT 042A BEGINNING PHOTOJOURNALISM

3 units

Historic and current trends in photojournalism and contemporary publications. Fundamentals of camera operation. Photography of news events both on and off campus. Ethics and media law relating to photojournalism. Students can potentially publish photos in campus news publications. No credit if taken after JOUR 042A. Total of 36 hours lecture and 72 hours laboratory.

Grade Mode: L, A, P

Rationale: Creating a PHOT section of the course to cross-list with JOUR 042A. Photojournalism would now comprise 4 courses: PHOT 042A, PHOT 042B, JOUR 042A and JOUR 042B. Apply for C-ID: JOUR 160

PHOT 042B ADVANCED PHOTOJOURNALISM

3 units

Production of photographs, photo illustrations and write captions for student news publications. Advanced students take on leadership roles in the newsroom and help make publication decisions based on editorial guidelines, deadlines and ethical and legal standards. No credit if taken after JOUR 022 or JOUR 042B. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC credit under review.

Grade Mode: L, A, P

Rationale: Creating a PHOT section of the course to cross-list with JOUR 042B. Photojournalism would now comprise 4 courses: PHOT 042A, PHOT 042B, JOUR 042A and JOUR 042B.

PHOT 070A WORK EXPERIENCE/INTERNSHIP IN PHOTOGRAPHY (PAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a photography paid position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees.

Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 75 hours of paid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition. This includes changing the maximum number of units from 6 to 8; update grade

mode to include P/NP. The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

PHOT 070B WORK EXPERIENCE/INTERNSHIP IN PHOTOGRAPHY (UNPAID)

½ to 8 units

Prerequisite: Completion of one semester at Pasadena City College and completion of one course in major.

Enrollment Limitation: Instructor approval.

Provides students on-the-job learning in a photography unpaid position. Development of effective work habits, attitudes, and career awareness so as to enable students to become productive employees. Credit may be accrued at the rate of 0.5 to 8 units per semester. One unit of credit for each 60 hours of unpaid work experience.

Transfer Credit: CSU

Grade Mode: L, P

Rationale: This part of a series of VAMS discipline-specific occupational skills work experience and internship courses to build on the campus-wide general internship course PCC created last year. The course outlines are identical to BUS 070A and 070B, with the changes required to make them discipline specific Occupational Work Experience courses, as defined by Title 5 § 55253: College Credit and Repetition. This includes changing the maximum number of units from 6 to 8; updated grade mode to include P/NP.

The TOP Code is also distinct, as specified by the TOP Manual (p, 16, 2012): Occupational Work Experience, as defined by Title 5, Section 55252 and that are included in an occupational program, should be reported in the T.O.P. code that designates the occupation in which the experience takes place.

Note: This is a variable unit course.

MODIFICATIONS

MODIFICATION – SPOs, MOEs, assignments, Distance Education update – Effective Summer 2020
ART 005 ART FUNDAMENTALS

3 units

A general art appreciation survey that offers a broad introduction to works of art through the study of theory, terminology, themes, design principles, media and the history of the visual arts across time and diverse cultures. Total of 54 hours lecture.

Transfer Credit: CSU; UC. *C-ID: ARTH 100

Grade Mode: L, A, P

Rationale: Art 005 Fundamentals requires the 5-year update, including Form D. It is a high demand online and F2F course. Modification of assignments, update SPOs, addition of MOEs.

MODIFICATION – SPOs, SLOs, MOEs, MOIs, CCOs, assignment, texts – Effective Summer 2020
ART 013 FOUNDATION PRINTMAKING

3 units

Introduction to the various methods of making two-dimensional art works in multiple printed forms. Making of printing elements for the production of original works on paper or other substrates for the purpose of visual communication and dialogue. Screen-print, monotype, lithograph, intaglio and relief process. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Course update. Modification to SPOs, SLOs, MOEs, MOIs, CCOs, assignment, texts.

MODIFICATION – course description, SPOs, SLOs, MOIs, MOEs, assignments, contact hours, texts – Effective Summer 2020

ART 015 SKETCHING FOR DESIGN

3 units

Quick sketching techniques for beginning design and illustration students utilizing a variety of media including pencil, pen, markers and a variety of papers. Emphasis on developing visual communication skills for advertising, graphics, illustration, jewelry, product and interior design. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU

Grade Mode: L, A

Rationale: Realigned SPO's to connect to SLO's, updated Methods of Instruction, Methods of Evaluation Student Performance, added Assignments, updated Course Description, added Course Hours, and added a textbook.

MODIFICATION – SLOs, SPOs, CCOs, MOIs, MOEs, CCOs, assignments, texts – Effective Summer 2020

ART 018 RENDERING

3 units

Prerequisite: ART 018.

Advanced graphic visualization for convincing representation emphasizing advanced presentation techniques and styles by use of marker, pencil, chalk and guache. Total of 36 hours lecture and 72 hours laboratory.

Grade Mode: L, A

Rationale: Update and correct SLOs, SPO's, CCO's, add Methods of Instruction and evaluation, added Credit Course Outline, assignments, add required textbook

MODIFICATION – SPOs, SLOs, MOEs, assignments, text, NCN (increase 20 to 24) – Effective Summer 2020

ART 023A PRINTMAKING - INTAGLIO AND RELIEF

3 units

Basic intaglio and relief fine art printing processes. Introduction to wood and linoleum cut, drypoint, etching and color printing techniques. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Modification of SPOs, SLOs, MOEs, assignments, texts. Increasing class size from 20 to 24.

MODIFICATION – SLOs, MOIs, MOEs, assignments, text, NCN (increase 20 to 24)– Effective Summer 2020

ART 023B PRINTMAKING-LITHOGRAPHY

3 units

Basic black and white and color hand lithographic printing from plate and stone. Introduction to direct drawing with dry and liquid materials, transfer, and photo-lithographic techniques. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Addition of MOIs, MOEs, assignment. Update texts. Increased class size from 20 to 24. Modification of SLOs.

MODIFICATION – SPOs, CCOs, MOIs, MOEs, assignments, texts, NCN (increase 20 to 24) – Effective Summer 2020

ART 023C PRINTMAKING-MONOTYPE

3 units

Exploration of printing unique images using a variety of painterly and direct drawing techniques on plexiglass and metal plates. Introduction to stencil, viscosity, texture, and transfer methods. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Update to insure units continue to be transferable to CSU and UC Systems. Modification to SPOs, CCOs, MOEs, MOIs, assignment, texts, max class size (from 20 to 24)

MODIFICATION – SPOs, SLOs, CCOS, MOEs, assignments, texts – Effective Summer 2020

ART 024 PRINTMAKING - SILK SCREEN

3 units

Basic fine art screen printing incorporating paper stencils, screen filler, drawing fluid, and photographic emulsion. Introduction to edition and monoprinting techniques with an emphasis on color printing. Total of 36 hours lecture and 72 hours laboratory.

Transfer Credit: CSU; UC

Grade Mode: L, A

Rationale: Course update. Modified SPOs, SLOs, CCOS, MOEs, assignments, texts.

MODIFICATION – course number, catalog description, prerequisite (removal of Jour 021 or Phot 021), SPOs, MOIs, SLOs, CCOs – Effective Summer 2020

JOUR 042A BEGINNING PHOTOJOURNALISM

3 units

Historic and current trends in photojournalism and contemporary publications. Fundamentals of camera operation. Photography of news events both on and off campus. Ethics and media law relating to

photojournalism. Students can potentially publish photos in campus news publications. No credit if taken after JOUR 023 or PHOT 042A. Total of 36 hours lecture and 72 hours laboratory. Formerly JOUR 023.

Transfer Credit: CSU. *C-ID: JOUR 160

Grade Mode: L, A, P

Rationale: Previously JOUR 23. We are creating a PHOT section of the course to cross-list.

Photojournalism/Advanced Photojournalism would now comprise 4 courses: PHOT 042A, PHOT 042B, JOUR 042A, and JOUR 042B. Eliminating prerequisites. Modification of catalog description, remove prereqs, SPOs, MOIs, SLOs, CCOs.

MODIFICATION – course number, catalog description, prerequisite (removal of Jour 021 or Phot 021), SPOs, MOIs, SLOs, CCOs – Effective Summer 2020

JOUR 042B ADVANCED PHOTOJOURNALISM

3 units

Production of photographs, photo illustrations and write captions for student news publications.

Advanced students take on leadership roles in the newsroom and help make publication decisions based on editorial guidelines, deadlines and ethical and legal standards. No credit if taken after JOUR 022 or PHOT 042B. Total of 36 hours lecture and 72 hours laboratory. Formerly JOUR 022.

Transfer Credit: CSU; UC credit under review.

Grade Mode: L, A, P

Rationale: Previously JOUR 22. We are creating a PHOT section of the course to cross-list.

Photojournalism/Advanced Photojournalism would now comprise 4 courses: PHOT 042A, PHOT 042B, JOUR 042A and JOUR 042B. Eliminating prerequisites.

MODIFICATION – required courses, required electives – Effective Summer 2020

STUDIO ART – AS/Certificate of Achievement

18 units

This curriculum is appropriate for students seeking transfer to programs that focus on the practice of fine art, or who wish to pursue professional practice as a visual artist. (Suitable transfer programs at four- year colleges, universities, or art institutes include the traditional studio arts—drawing, painting, sculpture, printmaking and ceramics; programs in photography and media arts that have a fine arts emphasis; and studio art programs that are not media-specific, with names such as “new genres.”)

Students completing the degree program will develop a portfolio of original artwork and prepare their work for exhibition.

Students pursuing a Bachelor's degree should research the specific requirements of desired transfer institutions and meet with a counselor, as completion of this certificate program is not a guarantee of acceptance. Students are advised to meet with a full-time visual arts faculty member for suggestions of potential transfer institutions and additional curriculum specific to their needs. (Students will be advised to complete the CSU-GE-Breadth or IGETC pattern.)

An Associate in Science degree is awarded upon completion of all required courses with a grade of C or better.

Required Courses

Required Core (Art 004D is CSU Transferable) - 6

ART 011A - FOUNDATION DRAWING (3.0 Units)
OR ART 004D - HISTORY OF MODERN ART (3.0 Units)

Required Capstone Course: Select 1 course from the following list: - 3

ART 075 - EXHIBITION AND PRESENTATION OF VISUAL ART (3.0 Units)
OR ART 145 - PORTFOLIO DEVELOPMENT AND CRITIQUE (3.0 Units)

Required Electives

ART 011B - INTERMEDIATE DRAWING (3.0 Units)

Studio Electives: Select 3 courses from the following. Include one B-level or second level course. - 9

ART 011C - PORTFOLIO DEVELOPMENT OF DRAWING (3.0 Units)
ART 012A - BEGINNING LIFE DRAWING (3.0 Units)
ART 012B - LIFE DRAWING (3.0 Units)
ART 020A - BEGINNING PAINTING (3.0 Units)
ART 020B - PAINTING (3.0 Units)
ART 020C - PAINTING (3.0 Units)
ART 022A - BEGINNING WATERCOLOR PAINTING (3.0 Units)
ART 022B - INTERMEDIATE WATERCOLOR PAINTING (3.0 Units)
ART 023A - PRINTMAKING - INTAGLIO AND RELIEF (3.0 Units)
ART 023B - PRINTMAKING-LITHOGRAPHY (3.0 Units)
ART 023C - PRINTMAKING-MONOTYPE (3.0 Units)
ART 024 - PRINTMAKING - SILK SCREEN (3.0 Units)
ART 025 - BEGINNING SCULPTURE (3.0 Units)
ART 027 - SCULPTURE TECHNOLOGY-METAL CASTING AND MOLD MAKING (3.0 Units)
ART 028 - FIGURE SCULPTURE (3.0 Units)
ART 038A - CERAMICS (3.0 Units)
ART 038B - CERAMICS (3.0 Units)
ART 038C - CERAMICS (3.0 Units)
ART 039A - HANDBUILT CERAMICS (3.0 Units)
ART 039B - HANDBUILT CERAMICS (3.0 Units)
ART 039C - HANDBUILT CERAMICS (3.0 Units)
PHOT 021 - INTRODUCTION TO BLACK AND WHITE PHOTOGRAPHY (3.0 Units)
PHOT 022A - LARGE FORMAT PHOTOGRAPHY (3.0 Units)
PHOT 031 - BEGINNING DIGITAL PHOTOGRAPHY (3.0 Units)
DMA 010 - DIGITAL ART: DESIGN FOUNDATION (3.0 Units)
DMA 012 - DIGITAL ART: PAINTING & DRAWING (3.0 Units)

DMA 060 - CREATIVE CODING (3.0 Units)

DMA 062 - CREATIVE CODING FOR THE INTERNET (3.0 Units)

DMA 064 - CREATIVE CODING FOR MOBILE DEVICES (3.0 Units)

DMA 068 - PHYSICAL COMPUTING FOR ART & DESIGN (3.0 Units)

DMA 070 - MOTION GRAPHICS (3.0 Units)

Rationale: This is a modification of an existing certificate to include Design Media Art's new courses and to encourage more integration between Design Media Art and Studio Art programs. Collaboration between Maryrose Mendoza and Masood Kamandy to

Remove Art 106 in 'Required Core.' Rationale: Course is not transferrable therefore does not serve students' path towards transfer.

Add Watercolor classes Art 22A and Art 22B to elective courses. Rationale: Adding these courses to the electives section gives students additional course options towards transfer and portfolio development.

Add DMA 68 - Physical Computing for Art & Design. Rationale: DMA and ART students need this new, transferable course to be able to use electronics and mechatronics (robotics, product prototyping, etc.) in their portfolios.