

MISSION COLLEGE



**ADDENDUM TO 2015 – 2017
CATALOG ADDENDUM AUGUST 22, 2016**



**MISSION
COLLEGE**
SANTA CLARA

SUBJECT CODE CROSSWALK

Crosswalk of Subject Codes: The subject codes for some courses have changed due to a change in our student information system (ex: ACCTG 001A to ACC 001A). This list is a complete crosswalk of old to new subject codes. Courses with new subject codes are considered equivalent to courses with old subject codes for the purpose of degree/certificate completion.

OLD	NEW	OLD	NEW	OLD	NEW
ACCTG	ACC	FRNCH	FRN	NCBAS	NCB
AH	AHL	GDES	GDS	NCESL	NCE
ANTHR	ANT	GEOG	GEO	NCIE	NCI
ARAB	ARB	GLOBL	GLB	NS	NTR
ASTRO	AST	H.ED	HED	PHIL	PHI
BIOSC	BIO	HIST	HIS	PHYS	PHY
CA	CAP	HM	HMT	POLIT	POL
CHEM	CHM	HO	HOC	PSYCH	PSY
CHIN	CHI	HUMAN	HUM	PT	PST
COMHL	CHL	INFDS	INF	READ	REA
COMM	COM	IS	INS	RF	RFL
COUNS	COU	JPNS	JPN	RLEST	RLS
ECON	ECN	LS	LSR	SOCSC	SOC
ENGL	ENG	LVNRN	LVN	SPAN	SPA
ENGR	EGR	MATH	MAT	VIET	VIE
FDRST	FDR	MUSIC	MUS	WRKEX	WRK

BIOLOGY

Associate in Science in Biology for Transfer

Mission College offers an Associate in Science in Biology for Transfer to students who successfully complete the coursework outlined below. Through intensive training in organismal, molecular, and environmental biology, students will develop the ability to think critically and abstractly, as well as acquire the problem-solving and laboratory skills necessary for success in any field of biological science. Students completing this program will have a solid foundation in basic biology, evolutionary theory, and the scientific method, as well as strong preparation in the supporting fields of mathematics, chemistry, and physics. They will also be prepared to transfer to a CSU with the proper preparation to enroll in upper division biological science courses to complete their Bachelor degree in Biology.

Program Learning Outcomes

- Students will apply the scientific method to investigate biological questions by collecting and quantitatively analyzing data.
- Students will identify and apply the central concepts, hypotheses, and theories that comprise the major areas of the biological sciences, including cell and organism structure and function.
- Students will explain the genetic or evolutionary connections between biological structures and their function, and between organisms and their environment.

Career/Transfer Opportunities

Students completing the Associate in Science in Biology for Transfer will be prepared for a seamless transfer to a CSU to pursue a Bachelor's degree in Biology. Through intensive training in organismal, molecular, and environmental biology, students will develop the ability to think critically and abstractly, as well as acquire the problem-solving and laboratory skills necessary for success in any field of biological science. Students completing this program will have a solid foundation in basic biology, evolutionary theory, and the scientific method, as well as strong preparation in the supporting fields of mathematics, chemistry, and physics.

To earn this AS-T in Biology, students must meet the following requirements

- Completion of the following major courses with grades of C or better
- Completion of a maximum of 60 CSU-transferable semester units with a grade point average of at least 2.0; and
- Certified completion of either California State University General Education-Breadth (CSU GE-B) for STEM or the Intersegmental General Education Transfer Curriculum (IGETC) for STEM.

Note: Completing courses that satisfy CSU's U.S. History, Constitution and American Ideals requirement prior to transfer is highly recommended

Required Core Curriculum

Complete all courses listed (10 units)	Units
BIO 001A General Biology: Cells.....	5.0
BIO 001B General Biology: Organisms.....	5.0

List A

Complete all courses listed (24-25 units)	Units
CHM 001A General Chemistry I.....	5.0
OR	
CHM 001AH General Chemistry I - Honors	5.0

AND	
CHM 001B General Chemistry II	5.0
OR	
CHM 001BH General Chemistry II - Honors.....	5.0
AND	
MAT 003A Analytic Geometry and Calculus I	5.0
OR	
MAT 003AH Analytic Geometry and Calculus I - Honors	5.0
AND	
PHY 002A General Physics- Mechanics and Thermodynamics	5.0
PHY 002B General Physics -Electricity, Magnetism and Optics	5.0
OR	
PHY 004A Engineering Physics-Mechanics.....	5.0
PHY 004B Engineering Physics- Electricity and Magnetism.....	4.0

List B

Complete listed course (3 units)	Units
PSY 001 General Psychology	3.0
OR	
PSY 001H General Psychology - Honors.....	3.0

Completion of CSU GE-B or IGETC Pattern Electives as needed to reach 60 units.

Total Units Required.....60.0

ASTRO (AST)

AST 004 • Astrobiology - Life in the Universe 3.00 Units

Total Lecture: 54 hours

Acceptable for Credit: California State University

This course applies the disciplines of astrophysics, biology, chemistry, geology, and planetary science to the possibility of life in the Universe outside of the Earth. Students study the astronomical, geological and physical environmental factors that determine habitability. Students further consider the chemical basis for life, the origin and evolution of life on Earth, the constraints of life on Earth, and the markers of life that maybe seen in other places in the solar system as well as outside of the solar system. *Pass/No Pass Option.*

BIOLOGICAL SCIENCES (BIO)

BIO 001AH • General Biology: Cells – Honors. 5.00 Units

Total Lecture: 54 hours, Total Lab: 108 hours

Advisory: CHM 001B

Prerequisite: CHM 001A or MAT 000C and BIO 010 or BIO 011

Acceptable for Credit: California State University

This honors course is a comprehensive introduction to cell and molecular biology, and is designed for students pursuing degrees in biology or professional programs such as medicine or pharmacy. Topics addressed in lecture and lab include biochemistry, the structure and function of prokaryotic and eukaryotic cells, cellular metabolism, and prokaryotic and eukaryotic gene expression and regulation. Students may not receive credit for both BIOSC 001A and BIOSC 001AH. Enrollment in the Honors Transfer Project is required. *Grade only.*

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 033 • Robotics and Embedded Systems 4.00 units

Total Lecture: 54 hours, Total Lab: 54 hours

Advisory: CIS 037A and CIS 039

Acceptable for Credit: California State University

This course is an introduction to microcontrollers and interfacing. It covers the basic hardware components such as LEDs, switches, motors and sensors needed to build a robot and introduce the components needed for the drone hardware. In addition, it includes programming of the microcontroller. *Pass/No Pass Option.*

ECONMICS (ECN)

ECN 001A • Principles of Macroeconomics 4.00 Units

ECN 001A (replaces ECON 001A/1AL)

Total Lecture: 54 hours, Total Lab: 54 hours

Advisory: MAT 000C

Prerequisite: MAT 903

Acceptable for Credit: California State University and University of California

This course is an introduction to macroeconomic analysis. Topics include aggregate measures of economic activity, such as gross domestic product, unemployment, and inflation; market systems; macroeconomic models and their equilibria; effects of fiscal and monetary policy; economic growth; evolution of economic thought; and international economics. The course also includes an online lab component that reinforces concepts learned through deeper learning and applications, and offers additional practice with solving problems in economics. *Grade only.*

ECN 001B • Principles of Microeconomics 4.00 Units

ECN 001B (replaces ECON 001B/1BL)

Total Lecture: 54 hours, Total Lab: 54 hours

Advisory: MAT 000C

Prerequisite: MAT 903

Acceptable for Credit: California State University and University of California

This course is an introduction to microeconomic analysis that focuses on choices of individual economic decision makers. Topics include scarcity and resource allocation, elasticity, market equilibrium in competitive and non-competitive market structures, consumer behavior, production decisions, income distribution, market failure and effects of government intervention. This course includes a lab component, which provides additional practice and deeper learning and applications. *Grade Only.*

ENGLISH (ENG)

ENG 013 • Chicana/o-Latina/o Literature 3.00 Units

Total Lecture: 54 hours

Acceptable for Credit: California State University

This course provides an introduction to authors, topics, and movements in Chicana/o and Latina/o literature from the 19th century to the present. Readings cover a variety of literary forms: novels, short stories, poems, drama, autobiography, and/or essays. In examining these works, particular attention is given to topics such as the similarities and differences in the experiences among Latino/a groups in the United States; the construction of identity in terms of race, gender, sexuality, and class; bilingualism and code-switching; and the relationship of the artist to his or her community. *Pass/No Pass Option.*

ENG 905AC • Accelerated Essay Writing 6.00 Units

Total Lecture: 108 hours

Prerequisite: Qualifying score on the English Placement Test or ESL 970GW, ESL 970RV, and ESL 970LS.

Concentration is on the writing and revision process, academic essays and introduction to research skills. The course qualifies students for English 001A. *Pass/No Pass Option.*

ENGINEERING (EGR)

EGR 010H • Introduction to Engineering – Honors 4.0 Units

Total Lecture: 54 hours, Total Lab: 54 hours

Advisory: MAT 903 or MAT 903M

Acceptable for Credit: California State University

This course is the honors version of Introduction to Engineering. This course exposes students to the field of engineering and the various engineering disciplines. Course presents the basic skills necessary to succeed as an engineering student. The nature of engineering work and the roles of engineers are explored. The Engineering Design Process is addressed through multiple team-based projects and engineering problem-solving topics. Communication skills for technical presentations and reports are developed through practical engineering scenarios. Guest speakers from local engineering firms and tours to local companies are included. Students may not receive credit for both EGR 010 and EGR 010H. Enrollment in the Honors Transfer Project is required. *Pass/No Pass Option.*

GRAPHIC DESIGN AND MULTIMEDIA

(GDS)

GDS 056 • Advanced Presentation Design 3.00 Units

Total Lecture: 36 hours, Total Lab: 54 hours

Advisory: CAP 046D, CAP 046E

Acceptable for Credit: California State University

This class focuses on the visual communication skills necessary to produce compelling presentations. Topics include color design, animation, interaction, storytelling, and advanced technical skills used in the production of assets for presentation. The class assumes an existing intermediate knowledge of Microsoft Powerpoint. *Pass/No Pass Option.*

GDS 089 • Javascript 1 3.00 Units

Total Lecture: 36 hours, Total Lab: 54 hours

Advisory: GDS 045

Acceptable for Credit: California State University

This is an introductory course on using Javascript to develop applications for the web. Students learn to develop interactive web pages using Javascript. This course covers Javascript basics, arrays, objects, an introduction to DOM scripting and debugging. Intermediate topics include advanced objects, Web forms, events, DOM Scripting dynamic content, cookies and Web storage, and an introduction to advanced topics such as AJAX and JavaScript libraries. *Pass/No Pass Option.*

HEALTH OCCUPATIONS (HOC)

HOC 004 • First Aid and CPR 0.5 Units HOC 004 (replaces H.ED 004)

Total Lecture: 9 hours

The American Heart Association (HeartSavers) CPR/AED and First Aid course is a training program to prepare individuals to respond to life-threatening emergencies and to injuries and sudden illness that may arise in the workplace and in the community. This course covers CPR for adults, children and infants and the use of AEDs (automated external defibrillators), and has scenarios to facilitate discussion of appropriate care in first aid emergencies. Successful participants receive an American Heart Association Adult/Child/Infant CPR, AED and First-Aid certificate. *Pass/No Pass Option.*

HOC 011 • Cardiopulmonary Resuscitation 0.5 Units HOC 011 (replaces AH 011)

Total Lecture: 9 hours

Acceptable for Credit: California State University

The course is designed to prepare the student to provide mouth-to-mouth rescue breathing and closed chest heart compression (Basic Life Support)

to a victim of sudden death. This course is taught according to guidelines of the American Heart Association. AHA CPR/AED course completion cards are issued to students who successfully meet course objectives. The student is required to read the textbook "BLS for Healthcare Providers" prior to attending class. *Pass/No Pass Option.*

HOC 019F • Home Health Aide Fundamentals 1.5 Units HOC 019F (replaces AH 020E)

Total Lecture: 27 hours

Prerequisite: Current CNA or eligibility for CNA examination

Corequisite: HOC 019G

Acceptable for Credit: California State University

This course introduces the Certified Nurse Assistant (CNA) to the basic concepts of home care nursing. Students learn entry-level skills for employment as a home health aide. Successful completion of this course along with HOC 019G provides eligibility for a California Home Health Aide (HHA) certificate. *Grade Only.*

HUMANITIES (HUM)

HUM 018H • African-American Culture and Humanities – Honors 3.00 Units

Total Lecture: 54 hours

Acceptable for Credit: California State University

This honors course is designed to provide the student with an overview of the humanities through the culture and life experiences of African-Americans. Content focuses on significant themes such as literary expressions, folklore, visual arts, music, dance, theater, religion, and philosophical thought. The course provides an examination of the historic, economic, and social forces that have inspired creativity among African-Americans. Students may not receive credit for both HUM 018 and HUM 018H. Enrollment in the Honors Transfer Project is required. *Pass/No Pass Option.*

INTERDISCIPLINARY STUDIES (INS)

INS 010 • Peer Tutor and Mentor Training 1.5 Units INS 010 (replaces IS 010)

Total Lecture: 27 hours

Acceptable for Credit: California State University

This course provides students with effective learning strategies and academic assistance techniques for peer tutoring and mentoring in a community college setting. This course also emphasizes skills in communication, problem solving, critical thinking, structuring learning experience and handling challenging situations. *Pass/No Pass Only.*

TRANSPORTATION (TRN)

TRN 010 • Introduction to Transit Industry Careers 1.00 Units

Total Lecture: 18 hours

Introduction to the wide variety of professions available in the public transit industry. Gain an understanding of the various departments and career pathways within the public transit industry and determine whether public transit is a potential career path to pursue. *Pass/No Pass Option.*

TRN 141 • Principles of Electricity and Test Equipment 3.00 Units

Total Lecture: 45 hours, Total Lab: 27 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers the basic principles of electricity needed to safely and efficiently perform overhead line work, including proper use of electrical test equipment. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 142 • Electrical Safety for the Trades 2.5 Units

Total Lecture: 45 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers basic principles of electricity and the potential dangers it can pose to humans. Safety topics include electrical hazards, use of electrical protective devices, and safe work practices around electricity. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 143 • DC Theory and Power Components 2.00 Units

Total Lecture: 36 hours

Advisory: MAT 903

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers DC (Direct Current) theory and various power components used in overhead line work. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 144 • Traction Power Safety Practices 2.5 Units

Total Lecture: 45 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers safe practices for the use of traction power systems. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Core apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 151 • Overhead Line Worker Apprenticeship Fundamentals I 2.5 Units

Total Lecture: 36 hours, Total Lab: 27 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers high voltage, NFPA 70E, red tag power outage procedures, print reading and documentation, and hand and power tools. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 152 • Overhead Line Worker Apprenticeship Fundamentals II 2.5 Units

Total Lecture: 27 hours, Total Lab: 54 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers traction power tools and test equipment, traction power substations, power distribution and control, and overhead contact systems. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 153 • Overhead Line Worker Apprenticeship Fundamentals III 2.5 Units

Total Lecture: 36 hours, Total Lab: 27 hours

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers fall protection, rigging and hoisting, hi-rail vehicles, bucket truck and bucket rescue, grounding, and confined space entry. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 154 • Catenary Safe Work Practices 5.0 Units**Total Lecture: 72 hours, Total Lab: 54 hours**

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers the hazards of working on overhead catenary lines, and how to effectively protect against them. Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 155 • Mobile Crane - Boom Truck 2.0 Units**Total Lecture: 27 hours, Total Lab: 27 hours**

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority.

This course covers safe use of the mobile crane (boom truck). Per California Code of Regulations, this course is limited to students admitted to the Overhead Line Worker apprenticeship program at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 421 • Transit Dispatching and Radio Communications 8.0 Units**8.0 Units****Total Lecture: 72 hours, Total Lab: 216 hours**

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Transit Radio Dispatching apprenticeship programs at Santa Clara Valley Transportation Authority.

This intensive course covers the combined classroom and field training sections of Transit Radio Dispatcher (TRD) training. Per California Code of Regulations, this course is limited to students admitted to the Transit Radio Dispatcher apprenticeship programs at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

TRN 441 • Business Technology and Writing for Supervisors 1.0 Units**1.0 Units****Total Lecture: 9 hours, Total Lab: 27 hours**

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Transit Supervisor apprenticeship programs at Santa Clara Valley Transportation Authority.

This course covers fundamental technology skills necessary for supervisory roles in today's public transit agencies, including the use of Microsoft Office applications and e-mail systems. Other topics include the basics of professional written communications in a business environment. Per California Code of Regulations, this course is limited to students admitted to the Transit Supervisor apprenticeship programs at Santa Clara Valley Transportation Authority. *Pass/No Pass Option.*

