Catalog Update for 2013-14 College Catalog
Last Updated: April 29, 2014

Policy Update

Revision to Test Retake Policy on page 17:

MATH AND ENGLISH:
You may retake the Math and English Placement Tests after two weeks. But you may take the tests only two times per testing cycle.

Testing cycles: Pre-Fall: March through August
                Pre-Spring: October through January

ESL:
1. If you have never enrolled in ESL 110, 120, 130, 140, 150 or 160:
   You may retake the ESL Placement Test after two weeks. But you may take the tests only two times per testing cycle.

2. If you have enrolled in ESL 110-160:
   You may retake the ESL Placement Test three months after the posting of the final semester grade for the class.

The CCSF placement tests are designed to help you determine your Math and English skills before you enroll in Math, English or ESL courses. If you wish to jump course levels after you have enrolled, contact the Math Department Chair, the English Eligibility Coordinator, or the ESL Coordinator for an individual assessment.

Program Status Change

The following program was mistakenly published in the 2013-14 College Catalog. It will not be available until it has received final approval from the State Chancellor’s Office.

<table>
<thead>
<tr>
<th>Department</th>
<th>Program</th>
<th>New Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of Justice and Fire Science</td>
<td>Certificate of Achievement in Criminal and Constitutional Law</td>
<td>Pending State Approval</td>
</tr>
</tbody>
</table>

BOARD OF TRUSTEES
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Programs

The following programs shall be considered included in the 2013-14 College Catalog, with the effective dates noted below.

<table>
<thead>
<tr>
<th>Department</th>
<th>Program</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>Associate in Arts in Studio Arts for Transfer (AA-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Administration of Justice and Fire Science</td>
<td>Associate in Science in Administration of Justice for Transfer (AS-T)</td>
<td>Spring 2014</td>
</tr>
<tr>
<td>Child Development and Family Studies</td>
<td>Associate in Science in Early Childhood Education for Transfer (AS-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Associate in Science in Computer Science for Transfer (AS-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Health Education</td>
<td>Certificate of Accomplishment in Infectious Disease Prevention in Priority Populations</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>History (Social Science)</td>
<td>Associate in Arts in History for Transfer (AA-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Associate in Science in Mathematics for Transfer (AS-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Physics</td>
<td>Associate in Science in Physics (AS)</td>
<td>Fall 2012</td>
</tr>
<tr>
<td>Physics</td>
<td>Associate in Science in Physics for Transfer (AS-T)</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>Political Science (Social Science)</td>
<td>Associate in Arts in Political Science for Transfer (AA-T)</td>
<td>Fall 2013</td>
</tr>
</tbody>
</table>

Associate in Arts in Studio Arts for Transfer (AA-T)

**Associate in Arts in Studio Arts for Transfer.** The AA-T in Studio Arts offers students a comprehensive lower division program in the fine arts, revolving around the basic core program. The AA-T prepares students for transfer to upper division Fine Art or Studio Arts programs at four-year colleges and universities, particularly to California State University campuses.

**Learning Outcomes**

Upon completion of this degree the student will be able to:

- Engage in a visual literacy that is based upon the understanding of the elements of design and the general awareness of historical and contemporary artistic cultures and trends.
- Critically evaluate artwork by identifying design elements and using discipline specific terminology and skills.
- Develop a series of projects that demonstrate critical analysis, creative thinking, technical skill in a variety of media, as well as the exploration of content and personal approach.
- Recognize opportunities of problem solving in the processes of creation.

**Degree Requirements:** Students who wish to earn the Associate in Arts in Studio Arts for Transfer (AA-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 24 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.
Courses Required for the Major in Studio Arts for Transfer
Course........................................................................... Units
Art 102 Western Art History ................................................... 3
Art 103 History of Modern Art .............................................. 3
Art 125A Basic Design........................................................ 3
Art 125B Advanced Design/3D Design .................................. 3
Art 130A Basic Drawing...................................................... 3

Studio Arts Electives (9 units)
Select three courses for a total of 9 units. Each course must be from a different area listed below:

Area 1: Color
ART 126 Color ................................................................. 3

Area 2: Drawing
ART 130B Intermediate Drawing
or ART 132A Beginning Figure Drawing.................................. 3

Area 3: Painting
ART 140A Beginning Painting .............................................. 3

Area 4: Printmaking
ART 150A Fine Art Printmaking.......................................... 3

Area 5: Ceramics
ART 160A Beginning Ceramics........................................... 3

Area 6: Sculpture
ART 170A Beginning Sculpture........................................... 3

Area 7: Metal Arts
ART 180A Beginning Metal Arts.......................................... 3

Area 8: Other Media
Art 136A Introduction to Illustration
or Art 145A Introduction to Watercolor Painting ........................ 3

Area 9: Second Level Courses:
ART 140B Intermediate Painting
or ART 150B Fine Art Intaglio Printmaking
or ART 160B Intermediate Ceramics
or ART 170B Intermediate Sculpture.................................... 3

Total.................................................................................. 24
Associate in Science in Administration of Justice for Transfer (AS-T)

Associate in Science in Administration of Justice for Transfer. This course of study prepares students for transfer, particularly to CSU, to complete work for a bachelor's degree in criminal justice. Students will be able to describe the individual functions and components of the modern criminal justice system; use introductory concepts of legal research as it relates to discussing the content of statutory and case law; and explain the underlying cause of antisocial and criminal behavior. This program is appropriate for students considering law school or careers in law enforcement.

Learning Outcomes
Upon completion of the major, students will be able to:

- Meet requirements for transfer, especially to the CSU system, in Administration of Justice and related majors.
- Apply the theory, techniques and knowledge of law enforcement to all aspects of the criminal justice system such as crime causation, criminal statutes, and elements of particular crimes.
- Evaluate various local, state, and federal law enforcement career options.
- Evaluate the legal aspects of criminal investigations, constitutional law, and case law.
- Apply laws and procedures for the collection and use of evidence.
- Identify ethical standards placed on law enforcement professionals and the ethical philosophy of the American justice system.

Degree Requirements: Students who wish to earn the Associate in Science in Administration of Justice for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 18-19 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

Courses Required for the Major in Administration of Justice for Transfer

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMJ 57 Introduction to the Administration of Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 52 Concepts of Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>Choose TWO of the Following Courses:</td>
<td></td>
</tr>
<tr>
<td>ADMJ 51 Juvenile Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 53 Legal Aspects of Evidence</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 54 Principles &amp; Procedures of the Justice System</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 62 Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>ADMJ 66 Physical Evidence</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose TWO of the Following Courses:

SOC 1 Introductory Sociology .................................................. 3
PSYC 1 General Psychology .................................................... 3
ECON 5 Introductory Statistics
or MATH 80 Probability and Statistics
or PSYC 5 Statistics for Behavioral Sciences ......................... 4

Total Units............................................................................. 18-19
Associate in Science in Early Childhood Education for Transfer (AS-T)

Associate in Science in Early Childhood Education for Transfer (AS-T). This degree is intended for students who plan to complete a bachelor’s degree in a similar major at a CSU campus. Students completing the degree are guaranteed admission to the CSU system, but not to a particular campus or major. A student graduating with an Associate in Science in Early Childhood Education for Transfer (Early Childhood Education AS-T) may transfer to a CSU Campus to complete a Bachelor’s Degree in Early Childhood Education, Child and Adolescent Development, Family and Consumer Sciences, Human Communication, Human Services, Liberal Studies or related fields.

Learning Outcomes
Upon completion of the AS-T courses, students will be able to:

• Understand and describe stages of child growth and development, including brain development, sensory motor development, cognitive development, language development, physical development and social-emotional development.

• Examine the role of families and communities in the lives of children and youth, including secure relationships, community resources, diverse family structures, inclusion and the development of a community commitment to social justice.

• Describe developmentally appropriate practice and diverse philosophical approaches in early childhood settings.

• Understand and describe the fundamental importance of play, sensory learning, inclusion and nurturing and responsive relationships.

• Compare and apply practices that promote professional and personal integrity among children, families, staff and colleagues including reflective practice, collaboration and teamwork strategies.

• Design and apply cross-cultural skills and knowledge to develop curriculum, communicate with families, build relationships with families and support the positive identity development of culturally diverse children and families.

• Describe safe and healthful environments in early education settings and in the community.

• Evaluate and demonstrate formal and informal observations and assessments of children to document development, play, growth and learning.

• Meet the requirements for transfer to a CSU campus for a Bachelor degree program in Early Childhood Education, Child and Adolescent Development or a related field.

Degree Requirements: Students who wish to earn the Associate in Science in Early Childhood Education for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 24 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

Courses Required for the Major in Early Childhood Education for Transfer:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEV 65 Orientation to ECE Principles and Practice</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 67 Child, the Family, and the Community</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 53 Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 66 Intro to Early-Childhood Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 93 Cultural Diversity in ECE</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 73 Observing and Assessing Children</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 92 Health, Safety, and Nutrition in Early Childhood Programs</td>
<td>3</td>
</tr>
<tr>
<td>CDEV 72 Supervised Field Experience in Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>
Associate in Science in Computer Science for Transfer (AS-T)

Graduates of the two-year degree program in Computer Science will have the skills in computer programming required for transfer to a four-year college. Upon successful completion of the curriculum, students receive the Associate of Science for Transfer (AS-T) degree, which gives priority admission to CSU. The degree program prepares students for transfer to four-year colleges for further study in Computer Science, as well as related areas such as Computer Engineering.

Learning Outcomes
Upon Completion of the major, students will be able to:

- solve problems and conduct experiments in basic computer science and physics
- solve mathematical problems using discrete math and calculus
- create and program algorithmic solutions to solve problems
- meet the requirements to transfer to a four-year degree program in Computer Science

Degree Requirements: Students who wish to earn the Associate in Science in Computer Science for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 28 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

Program Prerequisite: This major has a program prerequisite of CS 110A/111A Introduction to Programming in C++ or Java. Students who have never done any programming are strongly advised to take CS 110A or 111A before taking CS 110B/111B, and then 110C/111C.

Courses Required for the Major in Computer Science for Transfer

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110B Programming Fundamentals (C++)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>OR CS 111B Programming Fundamentals (Java)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CS 110C Data Structures and Algorithms (C++)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>OR CS 111C Data Structures and Algorithms (Java)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CS 270 Computer Architecture with Assembly Language</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 110A Calculus I</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH 110B Calculus II</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH 115 Discrete Mathematics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4A Physics for Scientists and Engineers</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4B Physics for Scientists and Engineers</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4AL Physics Laboratory for Scientists &amp; Engineers</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYC 4BL Physics Laboratory for Scientists &amp; Engineers</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

Infectious Disease Prevention in Priority Populations

The Infectious Disease Prevention in Priority Populations Certificate is a 11-unit program of study to prepare diverse entry-level workers in a variety of community-based public health, health care and social service settings that address infectious disease prevention and management, primarily HIV, STI's, TB, Hepatitis, and other select communicable diseases. Skill sets in the certificate include case management, outreach, client navigation & linkage, and counseling-motivational interviewing.

This certificate has been designed to combine course work with the Community Health Worker, Post-Prison Worker, Youth Worker, Drug and Alcohol Studies, and Sexual Health Educator Programs.
Students are strongly encouraged to combine the Infectious Disease Prevention in Priority Populations Certificate with these other certificates as appropriate to their interests to broaden their range of skills, knowledge, and career/employment opportunities.

**Admission.** Open enrollment—see catalog and course schedule for information regarding prerequisites for some courses.

**Requirements for the Certificate of Accomplishment.** Certificate requires completion of 11 units. Each course must be completed with a final grade of "C" or higher or Pass.

**Learning Outcomes**
Upon successful completion of this program students will be able to:

- Comprehend, apply and evaluate information on infectious disease prevention and management; primarily HIV, STI, TB, Hepatitis, and other select communicable diseases.
- Demonstrate entry-level proficiency in skills including case management, outreach, client navigation & linkage, and counseling-motivational interviewing.
- Demonstrate the ability to work with members in diverse communities including gay men, transgender, youth, communities of color, and consumers or substance abuse services using principles of harm reduction and cultural humility.
- Demonstrate the behavioral, ethical, and professional interpersonal skills necessary for employment in the field

**Courses Required for the Certificate of Accomplishment in Infectious Disease Prevention in Priority Populations**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH 67 HIV/STI Prevention</td>
<td>3</td>
</tr>
<tr>
<td>HLTH 66 Health Ed and Chronic Disease Management</td>
<td>3</td>
</tr>
<tr>
<td>HLTH 73 Case Mgmt/Individual Intervention</td>
<td>3</td>
</tr>
<tr>
<td>HLTH 91C Hepatitis ABC's</td>
<td>1</td>
</tr>
<tr>
<td>HLTH 95 Transgender Health</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td>11</td>
</tr>
</tbody>
</table>

**Associate in Arts in History for Transfer (AA-T)**

**Associate in Arts in History for Transfer (AA-T).** History is the study of multiple aspects of human behavior including the development of world civilizations; the creation of arts, literature, philosophy, and science; development of cultural heritages, political institutions, international diplomacy; and the significant achievements of human kind. The History major is designed to develop knowledge, analytical skills, and critical insight into the nature of humanity and the historical underpinnings of our current world. The core History program includes survey studies on the United States and Western Civilization. Survey courses on specific continents such as Africa, Latin America, and Asia, and focused studies on specific countries such as China, the Philippines, and Mexico, provide a breadth of coverage of international developments. Attention to traditionally under-represented groups such as women, African Americans, Latinos, Asian Americans, Native Americans, Lesbian, Gay, Bi and Transgendered peoples provides a multicultural emphasis on human achievement. The aim is to prepare students for active participation in all areas of life, with a deep understanding of how the present has been shaped by the past, and to prepare for transfer to a four-year university, and then to a range of possible careers.
Learning Outcomes

Upon completion of this degree, students will be able to:

- Demonstrate a breadth of knowledge of historical developments and trends, including the impact of class, gender, ethnicity, culture and politics related to the courses taken.
- Demonstrate the ability to critically analyze, evaluate and synthesize historical evidence and interpretations and to use methods of inquiry and expression appropriate to the course.
- Demonstrate the ability to interpret primary and secondary sources and to compose a written argument or interpretation which uses them, as appropriate, for support.
- Explain the major social, cultural, political and economic developments in United States history, their causes and effects, and their historical significance.
- Analyze changes in the political, social, cultural and economic organization in the western world and explain their historical significance.
- Demonstrate an understanding of the major social, cultural, political and economic developments in non-western countries and their historical impact on the western world and global development.
- Exhibit an understanding of the art, literature, and major cultural traditions of people through the ages, as appropriate.

Degree Requirements: Students who wish to earn the Associate in Arts in History for Transfer (AA-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 21 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirements may also be used to meet IGETC or CSU GE requirements.

Courses Required for the Major in History for Transfer

Course.................................................................................................................................................. Units

Core Courses - minimum 12 units:
HIST 17A The United States................................................................. ................................................. 3
HIST 17B The United States ................................................................. ................................................. 3
HIST 4A Western Civilization................................................................. ................................................. 3
HIST 4B Western Civilization................................................................. ................................................. 3

Diversity Course: United States Under-Represented Groups Choose any One of the following for a minimum of 3 units:
HIST 9 Immigrants in American History ................................................................. ................................................. 3
HIST 12A United States Women’s History ................................................................. ................................................. 3
HIST 12B United States Women’s History ................................................................. ................................................. 3
HIST 15A The Indian in North America ................................................................. ................................................. 3
HIST 15B The Indian in North America ................................................................. ................................................. 3
HIST 21 History of the Mexican American/Chicano ................................................................. ................................................. 3
HIST 41A The African American in the United States ................................................................. ................................................. 3
HIST 41B The African American in the United States ................................................................. ................................................. 3
HIST 45 Lesbian and Gay American History ................................................................. ................................................. 3

Global Context Course: Non-US, Non-Western Europe
Choose any One of the Following for a minimum of 3 units:
HIST 18A History of Latin America ................................................................. ................................................. 3
HIST 18B History of Latin America ................................................................. ................................................. 3
HIST 20 History of Mexico ................................................................. ................................................. 3
HIST 32 History of Russia ................................................................. ................................................. 3
HIST 33 History of South Asia ................................................................. ................................................. 3
HIST 34 The History of Japan ................................................................. ................................................. 3
HIST 35A History of China ................................................................. ................................................. 3
HIST 35B History of China ................................................................. ................................................. 3
Elective Course
Choose any of the Following for a minimum of 3 units (if not selected to meet requirement above):

HIST 12A United States Women's History ................................................................. 3
HIST 12B United States Women's History ................................................................. 3
HIST 15A The Indian in North America ................................................................. 3
HIST 15B The Indian in North America ................................................................. 3
HIST 18A History of Latin America ....................................................................... 3
HIST 18B History of Latin America ....................................................................... 3
HIST 20 History of Mexico .................................................................................. 3
HIST 21 History of the Mexican American/Chicano ........................................... 3
HIST 31 The History of England ......................................................................... 3
HIST 32 History of Russia .................................................................................. 3
HIST 33 History of South Asia ........................................................................ 3
HIST 34 The History of Japan ............................................................................... 3
HIST 35A History of China .................................................................................. 3
HIST 35B History of China .................................................................................. 3
HIST 36 History of Southeast Asia ...................................................................... 3
HIST 37 History of the Philippines ...................................................................... 3
HIST 37 History of the Philippines ...................................................................... 3
HIST 38 The Antebellum South in America ......................................................... 3
HIST 39 U.S. Presence in the Western Pacific Rim ............................................. 3
HIST 40 California ............................................................................................... 3
HIST 41A The African American in the United States ....................................... 3
HIST 41B The African American in the United States ....................................... 3
HIST 44 Comparative History of Overseas Chinese ........................................... 3
HIST 45 Lesbian and Gay American History .................................................... 3
HIST 48 African History ...................................................................................... 3
HIST 49 History of San Francisco ...................................................................... 3
HIST 50 United States Railroad History ............................................................. 3
HIST 53A The Civil War ....................................................................................... 3

Total Units: .......................................................................................................... 21

Associate in Science in Mathematics for Transfer (AS-T)

The Associate in Science in Mathematics for Transfer degree is designed to provide students with sufficient understanding of mathematical concepts, skills, and applications to succeed in upper division coursework in mathematics at a four-year college or university.

Students who complete this degree are guaranteed acceptance to a California State University, but are not guaranteed acceptance to a particular CSU campus or major. Students who plan to transfer to any other college or university should consult that institution’s catalog for specific transfer requirements.
Learning Outcomes
Upon completion of the mathematics major, students will be able to:

- Demonstrate computational and conceptual proficiency in differential and integral calculus, both single and multi-variable.
- Recognize and construct valid mathematical arguments.
- Use appropriate concepts and techniques from calculus and post-calculus mathematics to solve applied problems.
- Understand and apply rules of formal systems.

Degree Requirements: Students who wish to earn the Associate in Science in Mathematics for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 18-21 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

Courses Required for the Major in Mathematics for Transfer
Students must complete one of the following two options:

Option 1:
MATH 110A Calculus I ................................................... ............................................................. 4
MATH 110B Calculus II ................................................... ............................................................. 4
MATH 110C Calculus III ................................................... ............................................................. 4
MATH 120 Linear Algebra ................................................... ........................................................... 3
MATH 125 Differential Equations ................................................... .................................................. 3

Option 2:
MATH 110A Calculus I ................................................... ............................................................. 4
MATH 110B Calculus II ................................................... ............................................................. 4
MATH 110C Calculus III ................................................... ............................................................. 4
MATH 120 Linear Algebra ................................................... ........................................................... 3
OR MATH 125 Differential Equations ................................................... .......................................... 3-5
OR MATH 130 Linear Algebra and Differential Equations ................................................... ............. 3-5
One course from the Electives listed below ................................................... ................................. 3-4
Total .................................................................................................................................................. 18-21

Electives for Option 2:
MATH 80 Probability and Statistics ................................................... .................................................. 4
MATH 115 Discrete Mathematics ................................................... ................................................... 3
CS 110A Intro to Programming: C++ ................................................... ............................................. 3
CS 111A Intro to Programming: Java ................................................... ............................................. 3
PHYC 4A & 4L Physics for Scientists and Engineers & Lab ................................................... ............. 4

Associate in Science in Physics (AS)
The Associate in Science in Physics provides a broad background in fundamental physics through introductory course work with a full complement of laboratory courses. Physics graduates are prepared to transfer to California State University, University of California, and other universities for career paths in high tech research, engineering, and education. A physics degree is also a respected preparation for postgraduate studies in medical, business, and law school due to the prevalence of technology in our society. Physics majors develop strong mathematical, analytical, and laboratory skills, and a solid understanding of the fundamental physical laws that govern the universe.
Learning Outcomes
Upon completion of this program, students will be able to:

• Apply the principles of mechanics, electromagnetism, thermodynamics, waves, optics, and modern physics to theoretical problems as well as to experimental applications.
• Demonstrate laboratory skills including how to take and analyze data, keep an organized lab book, and write a lab report.
• Apply mathematics through multivariable calculus to solve physics problems.
• Transfer to a 4-year degree in physics.

Courses Required for the Major in Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYC 4A Physics for Scientists and Engineers</td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4AL Physics Laboratory for Scientists and Engineers</td>
<td>1</td>
</tr>
<tr>
<td>PHYC 4B Physics for Scientists and Engineers</td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4BL Physics Laboratory for Scientists and Engineers</td>
<td>1</td>
</tr>
<tr>
<td>PHYC 4C Physics for Scientists and Engineers</td>
<td>3</td>
</tr>
<tr>
<td>PHYC 4CL Physics Laboratory for Scientists and Engineers</td>
<td>1</td>
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<tr>
<td>PHYC 4D Physics for Scientists and Engineers</td>
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<tr>
<td>PHYC 4DL Physics Laboratory for Scientists and Engineers</td>
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<tr>
<td>MATH 110A Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 110B Calculus II</td>
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</tr>
<tr>
<td>MATH 110C Calculus III</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

Associate in Science in Physics for Transfer (AS-T)

The Associate in Science in Physics for Transfer. The Associate of Science in Physics for Transfer provides a broad background in fundamental physics through introductory course work with a full complement of laboratory courses. Physics graduates are prepared to transfer to California State University, University of California, and other universities for career paths in high tech industries, education, management consulting, medicine, and law. Physics majors develop strong mathematical, analytical, and laboratory skills, and a solid understanding of the fundamental physical laws that govern the universe.

Learning Outcomes
Upon completion of this program, students will be able to:

• Apply the principles of mechanics, electromagnetism, thermodynamics, waves, optics, and modern physics to theoretical problems as well as to experimental applications.
• Demonstrate laboratory skills including how to take and analyze data, keep an organized lab book, and write a lab report.
• Apply mathematics through multivariable calculus to solve physics problems.
• Transfer to a 4-year degree in physics.

Degree Requirements: Students who wish to earn the Associate in Science in Physics for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 28 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.
### Courses Required for the Major in Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
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<tr>
<td>PHYC 4AL Physics Laboratory for Scientists and Engineers</td>
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<td>PHYC 4B Physics for Scientists and Engineers</td>
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<tr>
<td>PHYC 4BL Physics Laboratory for Scientists and Engineers</td>
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<td>MATH 110A Calculus I</td>
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<td><strong>Total</strong></td>
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</tbody>
</table>

### Associate in Arts in Political Science for Transfer (AA-T)

**Associate in Arts in Political Science for Transfer.** Political science is the study of governments, power relations, public policies, political theories, political processes, and political behavior. The Political Science major is designed to develop knowledge, analytical skills, and critical insight into the nature of politics and political problems. Political science subfields include American government, political theory, comparative politics, and international relations, and the major introduces each of these, as well as allowing additional coursework. The aim is to prepare students for active participation in political life, whether as informed citizens or residents, and to prepare students for transfer to a four-year university in the field of Political Science, and then to a range of possible careers.

#### Learning Outcomes

Upon completion of this degree, students will be able to:

- Demonstrate an awareness and understanding of American political principles
- Analyze and critique current political topics and issues
- Understand the forms and processes of political participation, at the local, state, national, and/or international levels
- Evaluate the structure and function of other nations’ political systems and the international system
- Analyze different political theories, including liberalism and conservatism
- Analyze the historical and philosophical foundations of the United States and California constitutions
- Evaluate information by selection and using appropriate social science methodologies and approaches, including the use of primary sources.
- Examine complex issues and develop, evaluate, and test solutions and hypotheses using the scientific method

#### Degree Requirements:

Students who wish to earn the Associate in Arts in Political Science for Transfer (AA-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the 18-19 units for the major as specified below. Each course in the major must be completed with a grade of “C” or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

### Courses Required for the Major in Political Science for Transfer

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 1 American Government</td>
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<tr>
<td>POLS 2 Comparative Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 3 Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>POLS 5 International Relations</td>
<td>3</td>
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</tbody>
</table>
Elective Courses: Choose any 6 Units from the following options:

ECON 5 Introduction to Statistics
or PSYC 5 Statistics for the Behavioral Sciences

POLS 4 Politics of Globalization
POLS 6 Problems of Political Association
POLS 7 American Politics and the African American Community
POLS 8 Political Problems of Latin Americans
POLS 9 Campaigns and Elections
POLS 10 United States Foreign Policy
POLS 12 Ethnic Politics in the United States
POLS 13/LALS 13 Latin American and Latino/a Cross-Border Social Movements
POLS 18 Government and Politics of Latin America
POLS 20 The Politics and Policies of Cities
POLS 22 Environmental Politics and Policy
POLS 25 Political Action
POLS 30 Voter Education & Mobilization
POLS 35 Governments and Politics of East Asia
POLS 43 The Constitution and Individual Rights
POLS 45 Government and Politics of Middle East
POLS 47 Government and Politics of Southeast Asia
POLS 48 Government and Politics of Africa
POLS 41 Independent Studies in Political Science
POLS 42A-42B-42C-42D Discussions in Political Science
POLS 51-52-53 Selected Topics in Political Science

Total: 18-19