

Program Learning Outcomes

- Students will solve mathematical problems involving algebra, trigonometry, calculus and/or statistics.
- Students will solve applied problems by employing mathematical concepts to formulate and solve representative mathematical models.
- Students will apply appropriate technology to analyze and solve problems.

Career/Transfer Opportunities

Career opportunities include the following: teaching, education, researcher, computer programming, and statistical analysis.

To earn this degree, students must meet the following requirements:

- Completion of 60 degree applicable units with an overall GPA of 2.0.
- Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
- Completion of the Associate in Science graduation requirements.

Core Curriculum Courses Required:

	Units
MAT 003A Analytic Geometry and Calculus I	5.0
MAT 003B Analytic Geometry and Calculus II	5.0
MAT 004A Multivariable Calculus	4.0
MAT 004B Differential Equations OR	4.0
MAT 004C Linear Algebra	4.0
MAT 010 Elementary Statistics	4.0

Select one course from the following:

	Units
AST 001* Astronomy	3.0
AST 003* Astronomy with Lab	4.0
BIO 010* Introduction to Biology	3.0
CHM 002* Introductory Chemistry	3.0
PHY 002A* General Physics - Mechanics and Thermodynamics	5.0

Plus one of the following:

	Units
CIS 002* Visual Basic.NET	4.0
CIS 037A* Introduction to C Programming	4.0
CIS 043* Software Development With Java	4.0
EGR 030* Introduction to Computing for Engineers	4.0
MAT 019 Discrete Mathematics	4.0

Required Units for the Major: 29.0-31.0

Completion of General Education Requirements and electives as needed to reach 60 units.

Total Required Units: 60.0

* Or a more advanced course in that department

Note: Many MAT courses will require Internet access as well as purchase and use of MAT computer software.

MUSIC (MUS)

Certificate of Proficiency in Digital Music

This Certificate is designed to provide a foundation in digital music production for students with backgrounds in music, music technology, and/or multimedia design. The curriculum is based on recent advancements in the development of digital music systems and their widespread applications in both music and multimedia productions, and provides students with hand-on experience and a working knowledge of the creative and technical issues surrounding the production of digital audio content and its application and synchronization within other media. The certificate prepares students for career opportunities, professional development, and personal enrichment in the fields of digital music production and distribution, multimedia audio design, and music/multimedia software design.

Program Learning Outcomes

- Students will be able to operate the MIDI and audio functions of a Digital Audio Workstation (DAW).
- Students will be able to construct an original piece of music using a Digital Audio Workstation (DAW).
- Students will be able to apply music theory and knowledge of significant pieces of various genre to the creative process.

Career/Transfer Opportunities

Career opportunities include the following: music producer, recording engineer/mixer, assistant engineer, production assistant, studio manager/owner, sound technician, acoustic consultant, audio engineer for video, digital remastering engineer, live sound engineer, recording equipment manufacturer's representative, customer service, mastering engineer (post-production engineer), interactive and mixed media specialist, recording mixer (film and video), record company staff, recording room setup worker, studio designer, studio technician/maintenance, music editor, music/sound programmer, sound designer, DJ/remixer, and audio developer.

Core Curriculum Courses:

	Units
MUS 005 Fundamentals of Music Theory I	3.0
MUS 016 Survey of Rock and Popular Music	3.0
MUS 080A MIDI and Music Technology I	3.0
MUS 080B MIDI and Music Technology II	3.0
MUS 081 Digital Music Production I	3.0
MUS 083 Digital Music Production II	3.0

Total Required Units: 18.0

PHYSICS (PHY)

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

The Associate in Science in Physics for Transfer (AS-T in Physics) is designed to provide a clear pathway to a CSU institution for students who plan to transfer and complete a CSU major or baccalaureate degree in Physics. California Community College students who are awarded an Associate in Science in Physics for Transfer (AS-T in Physics) are guaranteed admission with junior standing somewhere in the CSU system and given priority admission consideration to their local CSU institution or to a program that is deemed similar to their community college major. This priority does not guarantee admission to specific majors or institutions.

The Associate in Science in Physics for Transfer (AS-T in Physics) provides a foundation in physics and mathematics for students planning to transfer into a baccalaureate program in physics or physics education. Successful completion of the program guarantees the student acceptance to a local California State University to pursue a baccalaureate degree in Physics or a related field. Upon completion of

