



## **Associate in Science in Physics for Transfer AS-T**

The Associate in Science degree in Physics for Transfer (AS-T) prepares students for transfer to a CSU baccalaureate program in physics by educating them in the fundamental concepts of mathematics and physics, developing analytical and quantitative reasoning skills, gaining comprehension of the integrated nature of mathematics and the sciences and executing experimental methods, assessment and interpretation of scientific phenomena.

### **Associate Degree for Transfer requirements (pursuant to SB 1440):**

Completion of 60 semester units that are eligible for transfer to a California State University.

The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements.

A minimum of 18 semester units in a major or area of emphasis, as determined by the community college district.

Obtainment of a minimum grade point average of 2.0.

A grade of “C” or better in all courses required for the major or area of emphasis.

### **Program Student Learning Outcomes**

Students completing the Physics AS-T Program will be efficient problem-solvers. They will be able to employ sophisticated problem solving techniques to identify the useful information provided, choose a strategy for solving the problem, demonstrate proficiency in arriving at a solution, test the solution, and interpret the results as they relate to appropriate physics concepts.

Students completing the Physics AS-T Program will be thorough and competent experimentalists. They should be able to design an experimental method, predict results using appropriate scientific and mathematics theory, perform the experiment and collect data while minimizing sources of error, express results with graphical and mathematical support, complete thorough error analysis, and interpret experimental results in comparison with theoretical predictions.

Students completing the Physics AS-T Program will be able to demonstrate efficient use of computer tools such as graphing programs, spreadsheets and databases, and basic word processing. They will also have fundamental knowledge of computer programming languages, algorithm development, and be able to write, compile, and run programs from scratch for problem solving.

Students completing the Physics AS-T Program will be effective oral and written communicators. They will be able to explain scientific theory verbally through presentation techniques and in writing through formal written reports, using scientific, mathematical, and analytical skills.

### **To earn the Associate in Science in Physics for Transfer Degree, a student must:**

Complete all degree course requirements in the major as outlined below with grades of C or better. This will include 14 required core units plus a four unit elective course from List A and a four unit course from List B.

Complete a minimum of 60 CSU-transferable semester units with a minimum grade point average of 2.0.

Complete either the CSU General Education Breadth pattern (CSU GE) which requires a minimum of 39 units, or the Intersegmental General Education Transfer Curriculum (IGETC), which requires 34-38 units. Double counting of courses is encouraged and permitted. Students are not required to complete the West Hills College Lemoore’s local graduation requirements (Health Education 35 and two units of activity courses, if applicable).



### Program Requirements

Course #	Title	Units
MATH 1A	Introduction to Calculus.....	5
MATH 1B	Calculus with Applications.....	5
MATH 2A	Multivariate Calculus.....	4
PHYSICS 4A	Classical Mechanics.....	4
PHYSICS 4B	Electricity, Magnetism & Waves.....	4
PHYSICS 4C	Thermodynamics, Optics & Modern Physics.....	4
	<b>Total</b> .....	<b>26</b>
	CSU GE-B or IGETC requirements (allowing double counting).....	34-39
	Electives (must be transferable to CSU).....	0-4
	<b>Total</b> .....	<b>60</b>