

## **Liberal Arts - Area of Emphasis for Math and Science**

### **Liberal Arts - Area of Emphasis for Math and Science AA Degree**

The Math and Science area of emphasis is designed to provide the student with foundational knowledge and skills in the following areas: the natural sciences, the physical universe, its life forms and natural phenomena. Students will be provided the opportunity to develop mathematical and quantitative reasoning skills and demonstrate understanding of the methodologies of science as investigative tools and to understand the influence scientific knowledge has on society. This area of emphasis prepares students for baccalaureate majors including but not limited to: agriculture, computer science, engineering, enology, geology, geography, genetics, health science, kinesiology, and pre-nursing.

#### **Program student learning outcomes:**

1. Students will use mathematical models and/or concepts to solve real-world applications.
2. Student will be able to label and identify prokaryotic and eukaryotic cell parts and describe their functions.
3. Student will describe the processes of nutrient catabolism in human body cells.
4. Student will differentiate between human tissue types and their respective functions.
5. Students will describe the transcription and translation of a human gene.
6. Student will use molecular models to interpret chemical systems.
7. Students will use graphing software to interpret data.
8. Student will demonstrate the ability to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
9. Students will demonstrate and understanding of how physical systems affect human systems and of how human actions affect physical systems.
10. Students will understand the Earth as a system with many separate but interacting parts.
11. Students will understand the relationship between people and the natural environment and will understand how the discipline of geology can be used to solve problems that arise from these interactions.
12. Students will understand how scientific hypotheses are formulated and tested in general and will specifically understand the evolution and development of major geological science theories.

#### **Students must fulfill the following requirements to qualify for an Associate Degree:**

- Complete the Local General Education or the California General Education Transfer Curriculum (Cal-GETC) requirements,
- Complete a minimum of 18 additional units from the major list below,
- Complete electives to reach a total of 60-degree applicable units,
- Earn a grade of C or better in each major course,
- Maintain a minimum cumulative G.P.A. of 2.00, and
- Complete the English and math proficiency requirements with a C or better

#### **Recommended Course Sequence: [Liberal Arts: Math & Science AA Degree](#)**

<i>Course #</i>	<i>Title</i>	<i>Units</i>
<b>Required Core Courses (18 Units). Students must complete at least one course in Math.</b>		
ASCI 012...	Introduction to Animal Science .....	3
BIO 010....	Fundamentals of Biology .....	3
BIO 015....	Biology for Education .....	3
BIO 032....	Human Anatomy .....	4
BIO 035....	Human Physiology .....	4
BIO 038....	Microbiology .....	4
CHEM 002A	Introductory Chemistry .....	4
CRPSCI 001.	Introduction to Plant Science .....	3
CRPSCI 002.	Plant Science Theory .....	3
CRPSCI 006.	Introduction to Precision Agriculture .....	3
CRPSCI 007.	Advanced Precision Agriculture .....	3
GEOG 001..	Physical Geography .....	4
GEOL 001..	Physical Geology .....	4
GEOL 003..	Historical Geology .....	4
MATH 063..	Intermediate Algebra .....	5
MATH 010A	Structure & Concepts in Mathematics I .....	3
MATH 010B	Structure & Concepts in Mathematics II .....	3
MATH 045..	Contemporary Math .....	3
MATH 001A	Introduction to Calculus .....	5
MATH 001B	Calculus With Applications .....	5
MATH 002A	Multivariate Calculus .....	4
MATH 002B	Differential Equations .....	4
STAT C1000	Introduction to Statistics .....	4
PSYCH 006..	Research Methods in Psychology .....	3
SLSCI 021..	Introduction to Soil Science .....	4
	Total Major Units.....	18
	Total Units that may be double-counted towards GE Units.....	6-9
	General Education (GE) Units.....	21-28
	Elective Units (As needed to reach 60 units).....	27-23
	<b>Total Degree Units .....</b>	<b>60</b>