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## Liberal Arts - Math and Science

### Liberal Arts Emphasis in Math and Science AA

The Liberal Arts with an Emphasis in Math and Science degree provides an area of emphasis for students that wish to develop a broad knowledge base while focusing on core mathematics and scientific skills useful for their intended transfer major. Natural science courses examine the physical universe, including its life forms, structure and natural phenomena that govern the universe. Mathematics course emphasize the development of mathematical and quantitative reasoning skills beyond the level of intermediate algebra, developing a quantitative framework for analysis of scientific principles. Students will gain comprehension of the integrated nature of mathematics and the sciences and will be able to execute experimental methods, assessment and interpretation of scientific phenomena.

Transfer majors appropriate for this area of emphasis include, but are not limited to: Biochemistry, Biology, Biotechnology, Chemistry, Earth Science, Ecology, Genetics, Geology, Geosciences, Health Science, Natural Science, Physical Science, Physics, Physiology and pre-professional majors including Pre-Dental, Pre-Medical, Pre-Physical Therapy and Pre-Veterinary. Students should consult the catalog of their intended transfer university for any local requirements in addition to those earned through this degree and contact a West Hills College Lemoore counselor for further information or assistance.

### Program Student Learning Outcomes

Upon completion of the program, student will be able to:

- identify and describe the structures and functions of living organisms.
- identify the composition of matter and types of energy.
- use mathematics to understand and interpret the world around them.
- perform quantitative analysis on sampled data.

### Required Coursework

Choose 18 units from the following: (at least 1 course must be from mathematics course (MATH) and 1 course must be from science courses (BIO, CHEM, GEOL, GEOG, PHYSCI, PHYSICS))

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Course #	Title	Units
<b>Required Core Courses</b>		
MATH 001A ...	Introduction to Calculus .....	5
MATH 001B ...	Calculus With Applications .....	5
MATH 002A ...	Multivariate Calculus .....	4
MATH 002B ...	Differential Equations .....	4
MATH 003A ...	Linear Algebra I .....	4
MATH 015 .....	Precalculus .....	5
MATH 025 .....	Introduction to Statistics .....	4
MATH 045 .....	Contemporary Math .....	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 001A ...	General Chemistry I .....	5
CHEM 001B ...	General Chemistry II .....	5
CHEM 002A ...	Introductory Chemistry I .....	4
GEOG 001 .....	Physical Geography .....	4
GEO 001 .....	Physical Geology With Lab .....	4
GEO 003 .....	Historical Geology .....	4
PHYSI 001 ....	Survey of the Physical Sciences .....	4
PHYSICS 002A	Mechanics and Thermodynamics .....	4
PHYSICS 002B	Elect., Mag., Optics & Modern Physics .....	4
PHYSICS 004B	Electricity, Magnetism & Waves .....	4
PHYSICS 004B	Electricity, Magnetism & Waves .....	4
PHYSICS 004C	Thermodynamics,optics and Modern Physics .....	4

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**Special Note: A student may receive credit for either BIO 010 or BIO 015, either CHEM 001A or CHEM 002A either PHYSICS 002A or PHYSICS 004A, either PHYSICS 002B or PHYSICS 004B**