Liberal Arts: Emphasis in Math and Science A.A. Degree 2012-2013

The Associate in Liberal Arts is designed for students who wish a broad knowledge of liberal arts and sciences plus additional coursework in an “Area of Emphasis”. This area of emphasis would be an ideal choice for students planning on transferring to the California State University or University of California as the student can satisfy their general education requirements, plus focus on transferable course work that relates to majors at CSU or UC. Please consult with a counselor for specific information regarding your intended major at the specific colleges/universality of your choice.

This program is intended for students who are planning to transfer to a 4-year university. Students are required to complete the general education requirements listed on the IGETC or CSU Breadth advising forms, along with a minimum of 18 units in one area of emphasis.

These courses emphasize the natural sciences, which examine the physical universe, its life forms and its natural phenomena.

Courses in math emphasize the development of mathematical and quantitative reasoning skills beyond the level of intermediate algebra. Students will be able to demonstrate an understanding of the methodologies of science as investigative tools. Students will also examine the influence that the acquisition of scientific knowledge has on human experience.

This emphasis includes lower-division coursework that prepares students for majors in science and engineering, math and health related fields.

This degree requires meeting the Citrus College General Education and proficiency requirements combined with successful completion (grades of "C" and above) of the following major requirements:

Courses listed in RED are offered in the distance education (online) format.

Choose at least one course from each category (A & B) and then complete additional courses in categories A or B to total 18 units.

A. Biological and Physical Sciences

ANTH212 Introduction to Physical Anthropology 3
ANTH212L Introduction to Physical Anthropology Lab 1
ASTR115 Planetary Astronomy 3
ASTR116 Stellar Astronomy 4
ASTR117 Life in the Universe 3
BIOL104 Biology: Contemporary Topics 3
BIOL105 General Biology 4
BIOL109 Biology for Educators 4
BIOL124 Principles of Biology I 5
BIOL125 Principles of Biology II 5
BIOL145 Environmental Science 3
BIOL200 Human Anatomy 4
BIOL201 Human Physiology 4
BIOL220 Microbiology 5
CHEM103 College Chemistry 5
CHEM104 College Chemistry 5
CHEM106 Physical Science for Educators 4
CHEM110 Beginning General Chemistry 5
CHEM112 General Chemistry 5
CHEM210 Organic Chemistry 3
CHEM211L Organic Chemistry Laboratory 1
CHEM220 Organic Chemistry 3
CHEM221L Organic Chemistry Laboratory 1
ESCI106 Earth and Space Science for Educators 4
ESCI118 Physical Geography 3
ESCI120 Physical Geology 4
ESCI121 Historical Geology 4
ESCI122 Geology: Earth History 3
ESCI124 Environmental Geology 3
ESCI130 Physical Oceanography 3
PHYS106 Physical Science for Educators 4
PHYS110 Introduction to College Physics 4
PHYS111 Physics for Life Sciences I 4
PHYS112 Physics for Life Sciences II 4
PHYS201 Physics A: Mechanics 5
PHYS202 Physics B: Thermodynamics and Electromagnetism 5

B. Mathematics
MATH151 Plane Trigonometry 4
MATH160 Survey of Mathematics 4
MATH162 Introductory Mathematical Analysis 4
MATH165 Introductory Statistics 4
MATH169 Mathematics for Elementary Teachers II 4
MATH170 College Algebra 4
MATH175 Pre-Calculus 4
MATH190 Calculus with Analytic Geometry I 4
MATH191 Calculus with Analytic Geometry II 4
MATH210 Calculus with Analytic Geometry III 4
MATH211 Differential Equations 5
MATH212 Introduction to Linear Algebra 4

Total Units 18

A.A. Degree Level Student Learning Outcomes

Students completing the Liberal Arts: Emphasis in Math and Science A.A. Degree will:

1. Use proper vocabulary and notation when describing mathematical concepts. They will be able to read books and documents and extract quantitative information.

2. Develop level appropriate computational skills. These will include numeric calculation, evaluation of expressions, analysis of data, and application of concepts.

3. Investigate and explain physical phenomena through application of empirical knowledge using mathematical and scientific processes and concepts.

4. Develop an understanding of and curiosity toward, the physical world. They will develop the analytical skills to devise questions and propose quantitative solutions.

5. Demonstrate computational skills and an understanding of mathematical reasoning that will increase self-esteem and set them on the path of Lifelong Learning.