

BA IN LIBERAL STUDIES (NATURAL SCIENCE)

Units required for Major: 100-103

Total units required for BA: 120

Program Description

The Liberal Studies program is an interdisciplinary major, which encompasses a wide variety of areas of knowledge in a multidisciplinary curriculum. The program provides a broad academic program that encourages academic excellence, diversity, community, and collaboration. There are two tracks in the Liberal Studies Program: Pre-Credential and General.

•The Pre-Credential program is a multidisciplinary major designed for students who intend to become K-8 or special education teachers in California, and it has been approved by the California Commission on Teacher Credentialing. Its purpose is to provide beginning teachers with a strong grounding in the wide ranging subject matter that will be needed to be effective teachers. The core section is comprised of courses in reading, language and literature, mathematics, natural science, history and social sciences, visual and performing arts, physical education, human development, and health. The Pre-Credential program requires a 12-unit concentration.

•The General program is designed for students who are interested in a multidisciplinary major, but who do not necessarily plan to become teachers. The Liberal Studies major is an excellent preparation for careers in government service, public administration, business, management, community service, counseling, law, librarianship, public health, as well as professional or graduate school. This major requires students to include a minor.

The Liberal Studies major is a complex program requiring early and continuing contact with an adviser. Students meet with an adviser at least once each semester to provide a hands-on approach to learning. Students must complete 120 units and meet the University foreign language requirement in order to earn a Bachelor of Arts degree. Students are urged to obtain advice as early as possible to avoid delays in the completion of these requirements. The Liberal Studies program director and faculty and staff advisers are located in Lassen Hall 2008, (916) 278-6342.

Minimum Grade Requirement

A minimum grade of "C-" is required in all courses applied to the Liberal Studies major.

Requirements for Concentrations (Pre-Credential Program)

All concentrations require a minimum of 12 units, 3 of which may overlap with the core course requirements (except for concentration in multicultural studies). Students who wish to complete requirements for a supplementary authorization in any CCTC-approved discipline, which allows them to teach the subject matter typically taught in grades K-9, should see an adviser for important information.

Requirements for the General Program

Students who are following the General Liberal Studies program will complete a minor instead of a concentration. Please talk to an adviser for more information.

Program Requirements

Code	Title	Units
Core Requirements for the Pre-Credential program (89 Units)¹		
<i>Reading, Language and Literature</i>		
COMS 5	The Communication Experience ²	3
ENGL 5	Accelerated Academic Literacies ²	3
ENGL 16	Structure Of English	3
ENGL 20	College Composition II ^{2,3}	3
ENGL 116A	Studies in Applied Linguistics	3
ENGL 116B	Children's Literary Classics	3
<i>Mathematics⁴</i>		
MATH 17	An Introduction to Exploration, Conjecture, and Proof in Mathematics ²	3
MATH 107A	Fundamental Mathematical Concepts	3
MATH 107B	Fundamental Mathematical Concepts	3
<i>Natural Science</i>		
BIO 7	Introduction to the Science of Biology ²	4
CHEM 106	Chemical Concepts	3
GEOL 8	Earth Science ²	3
GEOL 8T	Earth Science Lab for Teachers	1
PHYS 107	Conceptual Physics and Scientific Inquiry	4
<i>Social Science and Humanities</i>		
GEOG 100	Themes In World Geography	3
HIST 17A	United States History, 1607-1877 ²	3
HIST 50	World History I: to 1500 ²	3
HIST 132	Topics In World History	3
HIST 187	Topics in United States History 1600-1900	3
or ECON 104	Introduction to the United States Economy	
LBST 110	California Studies	3
POLS 1	Essentials Of Government ²	3
<i>Visual and Performing Arts</i>		
ART 133	Art Education for Children	3
MUSC 101	Experiences In Music	3
THEA 118	Children's Theatre	3
<i>Physical Education</i>		
KINS 172	Movement Education	3
<i>Health Science</i>		
PUBH 136	School Health Education	2
<i>Human Development</i>		
CHAD 35	Child and Adolescent Development	3
<i>Integrative Study</i>		
HRS 162	American Space and Identity	3
or MATH 107C	Elementary Mathematics and the Learning Process	
<i>Field Experience</i>		
CHAD 35F	Human Development and Elementary Field Experience	3
Select one of the following:		3

EDUC 194	Cooperative Education Experience
EDUC 124A & EDUC 124B	Tutoring Children in Mathematics Tutoring Children in Mathematics: Practicum
EDUC 125A & EDUC 125B	Tutoring Children in Reading Tutoring Children in Reading Practicum

Summative Assessment Requirement

The Liberal Studies Pre-Credential Program is in compliance with California Commission on Teacher Credentialing standards, and students who complete this major are waived from taking the California Subject Matter Examination (CSET).

Requirements for Concentrations (for the Pre-Credential program) (12-15 Units)

Select one of the following concentrations:	12
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	15
Linguistics/Composition	
Literature	
Foreign Language	
United States History	
World History	
California Studies	
American Studies	
Multicultural Studies	
Mathematics	
Natural Science	
Art	
Music	
Theatre	
Physical Education	
Human Development	
Total Units	101-104



¹ The Core Requirements for the General program are similar to the Core Requirements for the Pre-Credential program except there are a number of substitutions that can be made. Please see an adviser for more information.


² Course also satisfies General Education (GE)/Graduation Requirement.

³ Course to meet critical thinking requirement. See adviser for specific options.

⁴ Students who complete a mathematics concentration may substitute MATH 30, MATH 31, and MATH 35 for the above requirements. In addition, there are other ways of completing a concentration in mathematics. For further information on a concentration in mathematics, please consult the mathematics adviser in Liberal Studies.

Concentration in Natural Science

Code	Title	Units
CHEM 106	Chemical Concepts	3
Select three of the following:		9
ASTR 4A	Introduction to the Solar System	
ASTR 4B	Introduction to Stars, Galaxies, and Cosmology	
ASTR 131	The Solar System and Space Exploration 	
ASTR 132	Stars, Galaxies and Cosmology 	¹

ASTR 180	Through Space and Time in the Planetarium ¹
BIO 103	Plants and Civilization
BIO 105	Life in the Ocean
BIO 109	Biology of Dinosaurs
CHEM 6A	Introduction to General Chemistry
CHEM 6B	Introduction to Organic and Biological Chemistry
GEOL 115	Volcanoes: An Introduction
GEOL 121	Geology of California
GEOL 130	Oceanography ¹
GEOL 140	Geology and the Environment 
GEOL 170	Age of Dinosaurs
NSM 86A	STEM Learning Practices for Future Teachers
PHYS 30	Science and Pseudoscience ¹
PHYS 186	Musical Acoustics: Science and Sound ¹
Total Units	12

¹ Course also satisfies General Education (GE)/Graduation Requirement.

² BIO 7, PHYS 107, GEOL 8 and GEOL 8T count toward the core Liberal Studies requirements, but do not count toward the 12 units required in the Natural Science concentration in the Liberal Studies major.

General Education Requirements ¹

Code	Title	Units
Area A: Basic Subjects		
A1	Oral Communication ²	0
A2	Written Communication ²	0
A3	Critical Thinking ²	0
Area B: Physical Universe and Its Life Forms		
B1	Physical Science ²	0
B2	Life Forms ²	0
B3	Lab (Note: Lab experience to be taken with one of the following: B1, B2 or B5) ²	0
B4	Math Concepts ²	0
B5	Additional Course (Any B to reach 12 units) - Take upper-division course to complete Area & upper division requirements. ²	0
Area C: Arts and Humanities (9 Units)		
C1	Arts	3
C2	Humanities ²	0
C1/C2	Area C Course	3
C1/C2	Area C Course - Take upper-division course to complete Area & upper division requirements.	3
Area D: The Individual and Society (6 Units)		
Area D Course	²	0
Area D Course		3
Area D Course	- Take upper-division course to complete Area & upper division requirements.	3
Area E: Understanding Personal Development (3 Units)		
Area E Course		3
Area F: Ethnic Studies		
Area F Course		
Total Units		18

¹ To help you complete your degree in a timely manner and not take more units than absolutely necessary, there are ways to use single courses to meet more than one requirement (overlap). For further information, please visit the General Education page (<http://catalog.csus.edu/colleges/academic-affairs/general-education/>).
Note: There is no way to list all possible overlaps so please consult with a professional adviser. The Academic Advising Center can be visited online (<http://www.csus.edu/acad/>), by phone (916) 278-1000, or email (advising@csus.edu).

² Required in Major; also satisfies GE.

Graduation Requirements ¹

Code	Title	Units
Graduation Requirements (required by CSU) (3 Units)		
	American Institutions: U.S. History ²	0
	American Institutions: U.S. Constitution & CA Government ²	0
	Writing Intensive (WI)	3
Graduation Requirements (required by Sacramento State) (6 Units)		
	English Composition II ²	0
	Race and Ethnicity in American Society (RE) ²	0
	Foreign Language Proficiency Requirement ³	6

¹ To help you complete your degree in a timely manner and not take more units than absolutely necessary, there are ways to use single courses to meet more than one requirement (overlap). For further information, please visit the General Education page (<http://catalog.csus.edu/colleges/academic-affairs/general-education/>).
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² Required in Major; also satisfies Graduation Requirement.

³ If not satisfied before entering Sacramento State, it may be satisfied in General Education Area C2 (Humanities). "C- or better required." The alternative methods for satisfying the Foreign Language Proficiency Requirement are described here: <https://www.csus.edu/college/arts-letters/world-languages-literatures/foreign-language-requirement.html> (<https://www.csus.edu/college/arts-letters/world-languages-literatures/foreign-language-requirement.html>)