LA SIERRA UNIVERSITY

CHEMISTRY

B.A. Degree

Approved by Department. Last updated 7/1/09

2009-2010 CURRICULUM CHECK SHEET is a guide to the requirements of this major. **It is NOT necessary to take these courses in the order given**. Please consult the online Bulletin for specific details (http://www.lasierra.edu/academics/bulletin).

		FALL	WINTER	SPRING
FIRST YEAR	* General Chemistry (CHEM 111, 112, 113 & Labs)(15 units) *Meets Theme IVB*	_____	_____	_____
	* Chemistry Seminar (CHEM 205)(.5 units)(2 units total)	_____	_____	_____
	** Calculus I, II (MATH 131, 132)(8 units)	_____	_____	_____
	Calculus prerequisite satisfies Math Foundational Studies Requirement			
	First Year Seminar (UNST 101/100)(2-6 units)	_____	_____	_____
	College Writing (ENGL 111, 112, 113)(9 units) OR (ENGL 124)(4 units)	_____	_____	_____
	Lifetime Fitness (PEAC 120)(2 units)	_____	_____	_____
	Theme IA/B: Understanding Human Beings OR National and Global Citizenship (4 units)	_____	_____	_____
	Theme IC: Globalization, Identity, & Citizenship. *Choose 1 course from:* SSCI 104, 105, 106, 107 (4 units)	_____	_____	_____
	Theme III: Religious Beliefs and Practice (4 units)	_____	_____	_____
SECOND YEAR	* Chemistry Seminar (CHEM 205)(.5 units)(2 units total)	_____	_____	_____
	* Analytical Chemistry (CHEM 224)(4 units)	_____	_____	_____
	* Organic Chemistry I, II, III (CHEM 371, 372, 373 & Labs)(12 units)	_____	_____	_____
	** General Physics (PHYS 231, 232, 233 & Labs)(15 units) *Meets Theme IVB*	_____	_____	_____
	World Language Foundational Requirement *(Proficiency through 153)*	_____	_____	_____
	Theme IIA: History & Appreciation of Arts (4 units)	_____	_____	_____
	Theme IIC: Exploring American Culture. *Choose 1 course from:* HUMN 204, 205 (4 units)	_____	_____	_____
	Theme III: Religious Beliefs and Practice (4 units)			
THIRD YEAR	* Physical Chemistry (CHEM 351, 352, 353 & Labs)(12 units)	_____	_____	_____
	* Advanced Organic Laboratory (CHEM 375)(1 unit)	_____	_____	_____
	* Chemistry Electives to complete 60 units (4 units)	_____	_____	_____
	Upper Division Rhetorical Course (This requirement met by CHEM 405, 408, and 1 from CHEM 424, 425, or 426)(4 units)	_____	_____	_____
	Theme IIB: Historical or Contemporary Culture & Context (4 units)	_____	_____	_____
	Theme III: Religious Beliefs and Practice. *Choose 1 course from:* RLGN 304, 305 (4 units)	_____	_____	_____
	Electives	_____	_____	_____
FOURTH YEAR	* Senior Seminar (CHEM 405)(1 unit)	_____	_____	_____
	* Introduction to Research (CHEM 408)(1 unit)	_____	_____	_____
	* Instrumental Analysis: Select 2 courses from CHEM 424 & Lab OR 425 & Lab OR 426 & Lab (8 units)	_____	_____	_____
	Theme III: Religious Beliefs and Practice (4 units) *Must be in Scripture, Theme IIIC, unless previously taken*	_____	_____	_____
	Theme IVC: Scientific Foundations: Choose one course from the following: NSCI 404, 405, 406, 407 (4 units)	_____	_____	_____
	Theme V: Religious, Moral & Social Aspects of Chemistry (UNST 404D)(4 units)	_____	_____	_____
	Electives to complete 190 quarter units	_____	_____	_____

* Major Requirements (60 units)

** Cognate Requirements

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CAREER OPPORTUNITIES AND RELATED OCCUPATIONS: Chemists work in research and in industry as chemical engineers, occupational safety/health managers, agricultural scientists, chemical technicians, and in fields such as quality control, research and development, environmental testing crime laboratories, food chemistry, manufacturing industries, pharmaceuticals. Chemists also may teach and work in health-related fields including medicine, dentistry, allied health, health science, and medical technology. The majority of industry-related jobs in chemistry are filled by B.S. Chemistry applicants. Education-related jobs in chemistry may be filled by either B.A. or B.S. Chemists.

EDUCATIONAL QUALIFICATIONS: Entry-level jobs in industry require the bachelor's degree in chemistry. Advanced study or training beyond the bachelor's degree is required for the jobs listed above involving research and management training.

DENOMINATIONAL OPPORTUNITIES: Opportunities are limited to the teaching field. Students with bachelor's degrees in chemistry, biochemistry, or physical science will have good denominational employment opportunities for teaching the physical sciences, including chemistry and biochemistry, in academies.

JOB OUTLOOK: Employment of chemists is expected to grow more slowly than the average rate for all occupations through 2014. Job growth will be concentrated in pharmaceutical and medicine manufacturing and in professional, scientific, and technical services firms. Employment in the nonpharmaceutical segments of the chemical industry, a major employer of chemists, is expected to decline over the projection period.

ENTERING SALARY: The National Association of College and Employers reports that for July 2007 the national entering wage level for those with a Bachelor's degree in Chemistry was **$41,506** per year. According to the Occupational Outlook Handbook, the median annual earnings of chemists in 2006 were **$59,870.**

SOURCES OF ADDITIONAL INFORMATION

Websites:
La Sierra University
http://www.lasierra.edu/

Department Contacts:
Chairperson:
Marvin Payne, Ph.D.

Advisors:
Nate Brandstater, Ph.D.
Jennifer Helbley, Ph.D.
Michael Malarek, Ph.D.
Krista Motschiedler, Ph. D.
Roger Tatum, Ph.D.

Location:
Palmer Hall Room 230
951-785-2148

Professional Organizations & Career *Information:*
American Chemical Society,
Education Division
1155 16th St. NW.
Washington, DC 20036
http://www.acs.org

Academic Advising
Center for Student Academic Success
Sierra Vista Hall, Room 114
(951) 785-2452

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