LA SIERRA UNIVERSITY

BIOPHYSICS

B.S. 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 I, II, III (CHEM 111, 112, 113 & Labs)(15 units)	_____	_____	_____
	**	Calculus I, II, III (MATH 131, 132, 133)(12 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 1A/B: Understanding Human Beings OR National & Global Citizenship (4 units)	_____	_____	_____
		Theme IC: Globalization, Identity, & Citizenship. *Choose 1 course from:* SSCI 104, 105, 106, 107 (4 units)	_____	_____	_____
		Themes III: Religious Beliefs & Practice (4 units)	_____	_____	_____
SECOND YEAR	*	General Biology (BIOL 111, 112, 113 & Labs)(15 units)	_____	_____	_____
	*	General Physics I, II, III (PHYS 231, 232, 233 & Labs)(15 units)	_____	_____	_____
		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	*	Atomic Physics (PHYS 316)(4 units)	_____	_____	_____
	*	Human Body Mechanics (PHYS 326)(4 units)	_____	_____	_____
	*	Physics of Biomaterials (PHYS 336)(4 units)	_____	_____	_____
	*	Biophysics Seminar (PHYS 186) OR (PHYS 386)(1 unit)	_____	_____	_____
	**	Organic Chemistry (CHEM 371, 372, 373 & Labs)(12 units)	_____	_____	_____
		Upper Division Rhetorical Couse (This requirement met by PHYS 334, 404, plus either lab teaching or tutoring through the learning Support and Testing Center)(4 units)	_____	_____	_____
		Theme III: Religious Beliefs and Practice. *Choose 1 course from:* RLGN 304, 305 (4 units)	_____	_____	_____
		Electives	_____	_____	_____
FOURTH YEAR	*	Biomedical Imaging (PHYS 346)(4 units)	_____	_____	_____
	*	Cellular Physics (PHYS 356)(4 units)	_____	_____	_____
	*	Topics in Biophysics (PHYS 486)(4 units)	_____	_____	_____
	*	Cell & Molecular Biology (BIOL 301)(4 units)	_____	_____	_____
	*	Systems Physiology (BIOL 466)(4 units)	_____	_____	_____
	*	1 unit from PHYS 186, 386, OR BIOL 350 OR 450 (1 unit)	_____	_____	_____
	*	Biology Electives (Upper Division)(4 units)	_____	_____	_____
		Theme IIB: Historical or Contemporary Culture & Context (4 units)	_____	_____	_____
		Theme III: Religious Beliefs and Practice (4 units) *Must be in Scripture, Theme IIIC, unless previously taken*	_____	_____	_____
		Theme IVC: Scientific Foundations. *Choose 1 course from:* NSCI 404, 405, 406, 407 (4 units)	_____	_____	_____
		Theme V: Religious, Moral & Social Aspects of Biology (UNST 404B)(4 units)	_____	_____	_____
		Electives to complete 190 quarter units	_____	_____	_____

* Major Requirements (68 units)

** Cognate Requirements

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Fostering the growth of intellectual curiosity that will extend through post-college years and building an appreciation of the role of physics in everyday living constitute the general objectives of the department. For the Physics major there are the additional objectives of adequate preparation for entrance to one of the professional curriculums, for graduate study in physics, or for employment under the Civil Service classification of junior scientist-physicist or in a similar grade in private industry.

CAREER OPPORTUNITIES AND RELATED OCCUPATIONS:
Biophysicists are interested in the physics of living systems and organisms. Frequently a member of an interdisciplinary research team, the biophysicist may be found in hospitals, graduate schools, government research laboratories, and private industrial research and development. A very promising specialty is radiological health physics.

EDUCATIONAL QUALIFICATIONS: In order to specialize, graduate work is essential. One with a Bachelor's degree usually starts out as a technician and will advance to independent research and leadership with experience, competence in the field, and advanced education.

JOB OUTLOOK: Employment of physicists and astronomers is expected to grow more slowly than average for all occupations through 2014. Federal research expenditures are the major source of physics-related and astronomy-related research funds, especially for basic research.

SALARY: Median annual earnings of physicists were **$94,240** in 2008. The middle 50 percent earned between **$72,910** and **$117,080.** The lowest 10 percent earned less than **$52,070,** and the highest 10 percent earned **$143,570.**

SOURCES OF ADDITIONAL INFORMATION

Websites:
La Sierra University
http://www.lasierra.edu/
Department of Physics
http://www.lasierra.edu/departments/physics

Department Contacts:
Chairperson:
Ivan Rouse, Ph.D.

Advisors:
Horace Crogman, Ph.D.
Elvis Geneston , Ph.D.
Ivan Rouse, Ph.D.

Location:
San Fernando Hall
951-785-2136

Professional Organizations:
American Institute of Physics
Career Serivces Division and
Education and Employment
Division
One Physics Ellipse
College Park, MD 20740-3843
http://www.aip.org

American Physical Society
Education Department
One Physics Ellipse
College Park, MD 20740-3844
http://www.aps.org

American Association of
Physicists in Medicine (AAPM)
One Physics Ellipse
College Park, MD 20740
301-209-3350
http://www.aapm.org

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

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