



CALIFORNIA LUTHERAN UNIVERSITY
REQUIREMENTS FOR BACHELOR OF SCIENCE
BIOENGINEERING

NAME: _____ STUDENT ID: _____ TERM ENTERED: _____
 Catalog: 2012-2013

You should meet with your adviser once a semester. You may not register without your adviser's signature.

Course	Title	Credit	Comp LD	Comp UD	In Progress	Term Planned	Comments
BIEN 210/210L	Introduction to Engineering/Lab	4					
BIEN 220	Intro to Bioengineering/Lab	4					
BIEN 450	Seminar (2 units of BIEN 450)	2					
BIEN 495	Capstone	2					CAPSTONE: Prerequisite: senior standing.
BIOL 121	Intro to Cells & Organisms	3					Recommended: BIOL 120
BIOL 122	Intro to Genes & Develop.	3					Recommended: BIOL 120, BIOL 121.
BIOL 123L or BIOL 124L	Intro to Biol Experiment. I or Intro to Biol Experiment. II	2 2					
BIOL 461/L 461L	Vertebrate Physiology	4					Prerequisites BIOL 120,121,122,123, & 124; CHEM 151 & 152

Select 4 courses from the following

BIEN 401	Biomaterials & Tissue Engineering	4					Prerequisites: BIEN 210, BIEN 220 or consent of instructor.
BIEN 402	Biosensors and Imaging	4					Prerequisites: BIEN 210, BIEN 220 or consent of instructor.
BIEN 403	Biosyst. Anal & Control	4					Prerequisites: BIEN 210, BIEN 220, Phys 309 or consent of instructor.
BIOL 422	Bioinformatics – Analytical	4					
BIOL 482	Selected Topics: Neurobiology	4					
CHEM 305/ 305L	Quantitative Analysis/ Lab	4					
CHEM 306/ 306L	Instrumentation/Lab	4					Prerequisite CHEM 305
CHEM 425/425L	Biochemistry/Lab	4					Prerequisite CHEM 201 or 332 or consent of instructor
CSC 412	Bioinformatics – Computation	4					Prerequisites CSC 110 / CSC 210, & MATH 352 for CS majors. CSC 110 / CSC 210, MATH 352, & BIOL 422 for Biology majors.
EXSC 460	Mechanics of Biosystems – Calculus	4					
PHIL 345	Bioethics	4					
PHYS 309& 309L	Applied Electronics & Lab	4					Prerequisites MATH 151; PHYS 102, 212 or high school physics
PHYS 370	Digital Electronics	3					Prerequisite MATH 151

Required Supporting Courses:

Course	Title	Credit	Comp LD	Comp UD	In Progress	Term Planned	Comments
CHEM 151 & 151L	General Chem I and Lab	5					Prerequisites: MATH 151: high school chemistry; Math Placement Exam section I score of 14 or better or completion of MATH 110 Corequisite: CHEM 151L.
CHEM 152 & 152L	General Chem II and Lab	5					Prerequisites: CHEM 151: high school chemistry; Math Placement Exam section I score of 14 or better or completion of MATH 110 Corequisite: CHEM 152L.
CHEM 201 & 201L	Elementary Organic Chem	4					Prerequisite: CHEM 111 or CHEM 152.
CSC/SCI 205 Or CSC 210	Programming for Scientists Or Introduction to Computer Programming	4					Prerequisites: CSC 110 or permission of instructor, MATH 110 or equivalent.
MATH 251	Calculus I	4					Prerequisite MATH 151 or SAT Math 600+
MATH 252	Calculus II	4					Prerequisite MATH 251
MATH 261	Calculus III	4					Prerequisite MATH 252
MATH 265	Differential Equations	4					Prerequisite MATH 251; MATH 261 recommended
MATH 352	Probability/Statistics	4					Prerequisite MATH 252; MATH 261 recommended
PHYS 201 & 201L or PHYS 211 & 211L	Mechanics & Thermodynamics and Lab	4 or 5					Prerequisite MATH 151 Prerequisite MATH 251
PHYS 202 & 202L or PHYS 212 & 212L	Electricity, Magnetism, Optics and Lab	4 or 5					Prerequisite MATH 151 Prerequisite: PHYS 201, PHYS 211 or permission of the instructor.

Recommended Courses

BIOL 341 & 341L	Comparative Anatomy & Lab	4					Prerequisites BIOL 120, 121, 122, 123, & 124
BIOL 361 & 361L	Microbiology & Lab	4					Prerequisite BIOL 122, 124, or equivalent
MATH 343	Linear Algebra	4					Prerequisite MATH 252; MATH 261 recommended
MATH 450	Complex Analysis	4					Prerequisites MATH 261 and one other upper division MATH

Major Requirements

Requirement	Completed	In Progress	Remaining
total credits: 39 min			
upper-division credits: 24			
2.00 major GPA			