# Suggested Course Plan for a UC Riverside Major in Bioengineering

(Catalog Year 2010)

## Fall Quarter
- **BIEN 010 (2)** - Overview of Bioengineering
- **BIOL 005A/05LA (5)** - Cell Biology
- **CHEM 001A/01LA (5)** - General Chemistry
- **ENGL 001A (4)** - English Composition
- **MATH 009A (4)** - First Year Calculus

## Winter Quarter
- **BIOL 005B (4)** - Organism Biology
- **CHEM 001B/01LB (5)** - General Chemistry
- **ENGL 001B (4)** - English Composition
- **MATH 009B (4)** - First Year Calculus

## Spring Quarter
- **BIOL 005C or Alternate* (4)** - English Composition
- **MATH 009C (4)** - First Year Calculus

## Second Year
- **CHEM 112A (4)** - Organic Chemistry
- **CHEM 112B (4)** - Organic Chemistry
- **CS 010 (4)** - C++ Programming
- **MATH 101A (4)** - Multivariable Calculus
- **PHYS 040A (5)** - Physics (Mechanics)
- **PHYS 040B (5)** - Physics (Heat/Waves/Sound)

## Third Year
- **BCH 100 (4)** - Biochemistry
- **BIEN 110 (4)** - Biomechanics of Human Body
- **BIEN 115 (4)** - Biotechnology Lab
- **BIEN 120 (4)** - Biosystems & Signals
- **BIEN 125 (4)** - Biotechnology
- **BIEN 125L (2)** - Biotechnology Lab
- **BIEN 130 (4)** - Biomedical Instrumentation
- **BIEN 130L (2)** - Biomedical Instrumentation Lab
- **BIEN 140A (4)** - Biomaterials
- **BREADTH (4)** - Humanities/Social Sciences

## Fourth Year
- **BIEN 135 (4)** - Biophysics & Biothermodynamics
- **BIEN 155 (2)** - Biotechnology Lab
- **BIEN 159 (4)** - Dynamics of Biological Systems
- **BREADTH (4)** - Humanities/Social Sciences
- **BIEN 175A (4)**
- **BIEN 175B (4)**
- **TECHNICAL ELECTIVE (4)**
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- **BREADTH (4)**

## Notes
- Humanities/Social Sciences courses fulfill breadth requirements specific to the College of Engineering. A list of approved Breadth courses is available on the College of Engineering Student Academic Affairs website: [http://student.engr.ucr.edu/](http://student.engr.ucr.edu/)
- *Consult with your assigned Academic Advisor for alternate course choices to fulfill the third quarter of English Composition.
- **Technical Electives are courses which explore specific topics. A list of Technical Electives is available on the back of this Course Plan.
Bioengineering Technical Electives

You must complete 4 courses (at least 16 units) of Technical Elective coursework, select from the list below:

BIEN 140B: Materials
BIEN 160: Biomedical Imaging
BIEN 165: Biomolecular Engineering
*BIEN 197: Research for Undergraduates
BIEN 227: Bioh photonics I: Laser-Tissue Interactions and Therapeutics
BIEN 228: Biophotonics II: Optical Diagnosis and Measurements
BIEN 233: Computational Modeling of Biomolecules
BIEN 245: Fluorescence Methods
BIEN 251: Optical Microscopy
CEE 135: Chemistry of Materials
CHE 105: Introduction to Nanoscale Engineering
CHE 122: Kinetics
CHE 161: Nanotech Lab
ENVE 171: Environmental Engineering
ENVE 133: Air Pollution Engineering
ENVE 142: Water Quality Engineering
EE 100A: Electronic Circuits
EE 100B: Electronic Circuits
EE 105: Modeling of Dynamic Systems
EE 110B: Signals and Systems
EE 114: Random Variables and Processes
EE 138: Electrical Properties of Materials
EE 139: Magnetic Materials
EE 143: Multimedia Technologies
EE 144: Robotics
EE 145: Computer Vision
EE 152: Image Processing
ME 114: Materials Science and Engineering
ME 138: Transport in Living Systems
ME 143: Finite Elements
ME 180: Optics & Lasers
ME 270: Microelectromechanical Systems
ME 272: Nanoscale Science and Engineering

*BIEN 197: To receive credit for BIEN 197, a report must be submitted to the professor leading the research. The professor's approval or denial of the report must be communicated to Dr Anvari, who will communicate with the student's academic advisor. The report should contain Duration of the project, Purpose (scope) of the project, Results and Discussion, and Engineering skills acquired through the project.