

Curriculum Layout and Learning Outcomes
Department of Biological Sciences
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Course	BIOL 1550 BIOL 1551	BIOL 1560 BIOL 1561	BIOL 3050 BIOL 3051	BIOL 3080 BIOL 3081
Content	Will focus on structure, function, and biological processes in bacteria, viruses, and the animal kingdom.	Will focus on structure, function, and biological processes in protistans, fungi, and the plant kingdom.	Examines Mendelian and molecular genetics in bacteria, model eukaryotic organisms, and humans.	Examines cellular structure and function in both eukaryotic and prokaryotic cells. This course provides the foundation for understanding modes of cellular communication, such as channels, receptors, system messenger systems, and cell cycle processes. Energy production, storage and utilization are also discussed..
Learning Events	3-5 Exams, 1 final exam, Lab notebook, 1 formal Lab report, lab final	3-5 exams, 1 accumulative final exam, Lab notebook, 1 formal lab report, lab final	2 exams, 1 accumulative final, 10 formal lab reports, 1 formal presentation, 1 lab final	4 exams, vocabulary quizzes, lab notebook, lab midterm, lab final, comprehensive final

Course	BIOL 3200 BIOL 3201	BIOL 4400	BIOL 4430	CHEM 1100 CHEM 1101
Content	Defines ecosystems, examines how they function, and how human intervention changes that function. Emphasizes world ecosystems.	Lecture and discussion of the research process from question formulation to planning, design, methodology analysis, and preparation of a research proposal.	Senior research project to be completed in the laboratory or field. Completion of the project will culminate with a scientific write-up in publishable format. Research results will be presented at a formal meeting with faculty and peers.	An introduction to the general principles of modern chemistry. The major topics discussed include atomic and molecular structure, chemical bonding, stoichiometry, gases, solutions, and thermochemistry. In addition, the important classes of solution-phase reactions (acid-base, precipitation, and oxidation-reduction) are also treated.
Learning events	2 exams, homework assignments, project, 3 formal lab reports lab final accumulative final	Midterm, weekly written assignments, completion of research proposal	Formal lab notebook, formal written research paper, formal oral presentation to faculty, peers and public	

Course	CHEM 1110 CHEM 1111	CHEM 2100 CHEM 2101	CHEM 2110 CHEM 2111	CHEM 3100 CHEM 3101
Content	A continuation of CHEM 1100. Major topics include kinetics, chemical equilibrium, electrochemistry, and the properties of solids, liquids, and solutions.	An introductory study of the functional groups of organic compounds. Reaction mechanisms and structure determination are presented. Practical applications are stressed.	A continuation of the study of the common functional groups, mechanisms, and reactions. Introduction to biochemicals included	Studies the structure and function of proteins, enzyme kinetics, carbohydrates, lipids, amino acids, and nucleic acids. Molecular physiology is also reviewed
Learning Events		Graded homework, exams, attendance	Attendance, Research project, formal write up	4 exams, Lab notebook, formal lab report, accumulative final

Curriculum Layout and Learning outcomes (Cont.)

Course	CHEM 3110	PHYS 2030) PHYS 2031	PHYS 2040 PHYS 2041
Content	Studies metabolism and the techniques and principles of molecular genetics.	Introduces physics, using a calculus-based approach to derivation of relationships. Content includes vectors, kinematics, dynamics, momentum, energy, SHM, rotational motion, waves, and thermodynamics.	Continues PHYS 2030, covering electricity, magnetism, optics, electronic circuits, atomic physics, relativity, and nuclear physics.
Learning Events	4 intensive writing exams, accumulative final	15 quizzes, 4 exams, cumulative final	15 quizzes, 4 exams, cumulative final