BIOL 6150. Genomics and Applied Bioinformatics. 3 Credit Hours.
Retrieval and analysis of biological sequence, gene expression, and proteomics data from public databases and other sources; applying standard bioinformatics tools to investigate biological questions.Credit not allowed for both BIOL 6150 and BIOL 4150.

BIOL 6221. Biological Oceanography. 3 Credit Hours.
An introduction to the major biological processes in the ocean, including primary production, elemental cycling, food webs, and fisheries.

BIOL 6410. Microbial Ecology. 3 Credit Hours.
Advanced studies of microbial ecosystems, the specific roles of bacteria in maintaining ecological balance, and the evolution of the ecosystem in response to changing environments.

BIOL 6417. Marine Ecology. 3 Credit Hours.

BIOL 6418. Microbial Physiology. 3 Credit Hours.
Study of the physiology of growth and metabolic activities of microorganisms.

BIOL 6422. Theoretical Ecology. 3 Credit Hours.
Theoretical foundations of ecology, from the population to the community and ecosystem levels.

BIOL 6428. Population Dynamics. 3 Credit Hours.
Students will examine the ecological factors that affect dynamics, regulation, and evolution of natural populations, emphasizing the connections with mathematical models, genetics, and ecology. Credit will not be awarded for both BIOL 6428 and BIOL 4428.

BIOL 6478. Methods in Molecular Biophysics. 3 Credit Hours.
An introduction to biophysical methods that are employed to study biological macromolecules and their interaction to gain understanding of how they function.Credit not allowed for both BIOL 6478 and BIOL 4478.

BIOL 6480. Evolutionary Developmental Biology-How to Build an Organism. 2 Credit Hours.
This course teaches students how the process of development from embryo to adult impacts evolutionary diversity and human health.Credit not allowed for both BIOL 6480 and BIOL 4480.

BIOL 6570. Immunology. 4 Credit Hours.
A survey of modern immunology and its applications, with emphasis on immunological methods used in molecular and cell biological research.

BIOL 6600. Evolution. 3 Credit Hours.
An introduction to evolutionary patterns and processes, including the history of life, phylogenetics, population genetics, quantitative genetics, molecular evolution, and other important topics in evolutionary biology.

BIOL 6607. Molecular Biology of Microbes: Disease, Nature, and Biotechnology. 3 Credit Hours.
Molecular genetics of bacteria with an emphasis on experimental approaches, regulatory mechanisms in disease-causing and environmental bacteria, and biotechnology applications derived from microbes. Credit will not be awarded for both BIOL 6607 and BIOL 4607, BIOL 4608, or BIOL 6608.

BIOL 6608. Advanced Microbial Genetics. 3 Credit Hours.

BIOL 6611. Advanced Microbial Physiology. 3 Credit Hours.
Advanced studies of selected aspects of the physiology of prokaryotic and eukaryotic microorganisms.

BIOL 6620. Aquatic Chemical Ecology. 3 Credit Hours.

BIOL 6623. Experiments in Aquatic Chemical Signaling. 6 Credit Hours.
A full-time commitment to student-originated, but faculty-guided, interdisciplinary research in aquatic chemical signaling using field, lab, and flume facilities at Skidaway Institution of Oceanography on the coast.

BIOL 6626. Physiological Ecology. 3 Credit Hours.
Study of the basic physiological processes and systems in vertebrates and invertebrates.Comparative study on how these systems are adapted for specific environments and functions.

BIOL 6628. Aquatic Toxicology. 3 Credit Hours.
Study of the biological effects of toxicants on aquatic organisms-mechanisms of toxicity, biotransformation, toxicity tests, ecological risk assessment.

BIOL 6630. Advanced Microbial Ecology. 3 Credit Hours.
Advanced studies of selected aspects of the ecology of prokaryotic and eukaryotic organisms.

BIOL 6720. Environmental Microbial Genomics. 3 Credit Hours.
To introduce advanced concepts and principles of contemporary environmental microbiological research and associated bioinformatics techniques through representative examples from recent literature.

BIOL 6756. Discovery of Signaling Molecules. 3 Credit Hours.
The diversity of chemical signals between organisms and their structural specificities will be presented along with chemical and biological methods for isolating signaling molecules.Crosslisted with CEE 6756 and CHEM 6756.

BIOL 6765. Geomicrobiology. 3 Credit Hours.
Interactions between microorganisms and the geosphere, microbial energetics and genetics; geochemical controls on microbial diversity and activity.Crosslisted with EAS 6765.

BIOL 6XXX. Biology Elective. 1-21 Credit Hours.

BIOL 7000. Master's Thesis. 1-21 Credit Hours.

BIOL 7001. Foundations in Molecular and Cell Biology. 4 Credit Hours.
The goal of this course is to provide new students with fundamental knowledge in the general areas of prokaryotic and eukaryotic molecular biology, biochemistry, structural biology, and bioinformatics.

BIOL 7010. Advanced Cell Biology. 3 Credit Hours.
Current topics in eukaryotic cell biology including membrane functions, intracellular sorting and compartmentalization, cell signaling, cell cycle, cytoskeleton, cell adhesion, motility, and current experimental approaches.

BIOL 7015. Cancer Biology and Technology. 3 Credit Hours.
This course covers the major concepts of cancer biology as well as to state-of-the-art technologies that are being applied to cancer research, detection and treatment.Credit not allowed for both BIOL 7015 and BIOL 4015.

BIOL 7023. Bioinformatics. 3 Credit Hours.
Introduction to mathematical, statistical, and computer methods of nucleic acid and protein sequence analysis and interpretation. Algorithms for gene finding, protein structure and function prediction, constructing phylogenetic trees.

BIOL 7101. Advanced Sensory Ecology. 3 Credit Hours.
A quantitative analysis of how organisms of all kinds obtain information about their environment, and how they use it to guide locomotions.
BIOL 7110. Macromolecular Modeling. 4 Credit Hours.
Principles and practices in the use of molecular mechanics methods (minimization: molecular dynamics) to study structure-function relationships in biological macromolecules.

BIOL 7111. Molecular Evolution. 3 Credit Hours.
Evolutionary processes at the molecular level, organizations of genomes and genetic systems. Students will read and present up-to-date research articles in various topics in molecular evolution.

BIOL 7200. Programming for Bioinformatics. 3 Credit Hours.
This active-learning, project-based course provides a rigorous introduction to scientific computing for bioinformatics, including Linux utilities, shell scripting and bioinformatics programming.

BIOL 7210. Computational Genomics. 3 Credit Hours.
In this active-learning class, students will learn to convert sequence information into knowledge through the use of computational genomics tools, applications and databases.

BIOL 7668. Eucaryotic Molecular Genetics. 3 Credit Hours.
Topics in molecular genetics of eukaryotic organisms, including: gene structure and expression, protein processing and folding, genome stability, and molecular evolution.

BIOL 7913. Advances in Microbiology. 2 Credit Hours.
Topics of current interest in microbial physiology, applied microbiology, microbial ecology, and medical microbiology.

BIOL 7914. Advances in Bacteriology. 2 Credit Hours.
Topics of current interest in the physiology and ecology of bacteria and applications to practical problems.

BIOL 7923. Advances in Ecology. 2 Credit Hours.
Topics of current interest in the general areas of population growth and limitation, and the structure and stability of ecosystems.

BIOL 7924. Advances in Environmental Biology. 2 Credit Hours.
Topics of current interest in environmental biology.

BIOL 7963. Advances in Molecular Biology. 2 Credit Hours.
Topics of current interest in molecular biology.

BIOL 7964. Advances in Genetics. 2 Credit Hours.
Topics of current interest in genetics.

BIOL 8000. Integrative Biology Seminar. 2 Credit Hours.
A reading and discussion course structured around the School of Biology weekly seminar.

BIOL 8001. Seminar. 2 Credit Hours.
Presentation of research seminar.

BIOL 8002. Seminar. 1 Credit Hour.
Weekly seminars on current research presented by various scientists in the field of biology.

BIOL 8003. Seminar. 1 Credit Hour.
Weekly seminars on current research presented by various scientists in the field of biology.

BIOL 8005. Signals in the Sea Seminar. 2 Credit Hours.
Students and invited authorities in the field will present seminars and lead discussions focused on currently emerging topics in aquatic chemical ecology and signaling.

BIOL 8006. Integrative Approaches to Biological Systems. 2 Credit Hours.
This course will investigate, using samples from the literature and faculty research, the general principles of biological systems, from gene expression circuits to ecological communities.