BESC 201 Introduction to Bioenvironmental Sciences
Credits 3. 3 Lecture Hours.
A broad survey of environmental science with an emphasis on scientific literacy, current events, global and international issues and historic context.

BESC 204 Molds and Mushrooms: The Impact of Fungi on Society and the Environment
Credits 3. 3 Lecture Hours.
Introduction to the fungi and the impact these organisms have on society and the environment; includes life cycles of fungi; classification schemes, pathogens of plants, animals and humans, fungi in food production; toxic fungi and the law, and others.

BESC 285 Directed Studies
Credits 1 to 4. 1 to 4 Other Hours.
Individually supervised research or advanced studies for lower-division undergraduate students to independently investigate special problems not available in existing courses.
Prerequisite: Approval of instructor in consultation with departmental advisor.

BESC 291 Research
Credits 1 to 4. 1 to 4 Other Hours.
Research conducted under the direction of faculty member in bioenvironmental sciences. May be repeated 3 times for credit.
Prerequisites: Freshman or sophomore classification and approval of instructor.

BESC 311 International Perspectives on Environmental Issues
Credits 3. 3 Lecture Hours.
Role of the United Nations and other institutions that promote international cooperation toward sustainable development goals; influence of cultural views on critical thinking about environmental issues, including population, water and agriculture, biodiversity and energy.
Prerequisite: Junior classification or approval of instructor; must attend two mandatory pre-departure meetings.

BESC 314 Pathogens, the Environment and Society
Credits 3. 3 Lecture Hours.
The impact of microorganisms (bacteria, fungi and viruses) on the development of modern culture and society; the role pathogens played in the history of mankind and the influence of the changing environment on emerging diseases.
Prerequisite: Junior or senior classification.

BESC 320 Water and the Bioenvironmental Sciences
Credits 3. 3 Lecture Hours.
Critical understanding of salient issues relating to fresh water as a limited and important bioenvironmental resource.
Prerequisite: Junior or senior classification.

BESC 357 Biotechnology for Biofuels and Bioproducts
Credits 3. 3 Lecture Hours.
Biotechnology issues in developing bioenergy as a renewable energy source; emphasis on the three generations of bioenergy and enabling technologies; special topics include recent advances in bioenergy research, government policy, and industrial development.
Prerequisite: BESC 201 and junior or senior classification.

BESC 367 U.S. Environmental Regulations
Credits 3. 3 Lecture Hours.
Investigation of the legal infrastructure of the U.S. associated with regulating environmental impacts; examination of major U.S. environmental statutes associated with air and water quality, toxic substances, waste and hazardous substance release, energy and natural resources; review the relationship between U.S. policy and international environmental regulations.
Prerequisites: BESC 201 and junior or senior classification.

BESC 401 Bioenvironmental Microbiology
Credits 3. 3 Lecture Hours.
The interactions of microorganism in diverse environments; applied aspects of microbial interactions in the environment, their effects on the environment, and potential use to solve environmental problems.
Prerequisites: SCSC 405 and 3 hours of organic chemistry, or equivalents; or approval of instructor.

BESC 402 Microbial Processes in Bioremediation
Credits 3. 3 Lecture Hours.
Metabolic pathways of microbes involved in the biodegradation of hazardous materials will be presented; ecological requirements for biotreatability of contaminated sites will be discussed emphasizing factors affecting microbial growth; strategies for in situ bioaugmentation will be presented.
Prerequisite: One semester of organic chemistry.

BESC 403 Sampling and Environmental Monitoring
Credits 3. 2 Lecture Hours. 1 Lab Hour.
Introduction to environmental sampling and methodology; strategies and analyses of sampling data; overview of current applications of sampling and monitoring in the environmental sciences; emphasis on practical aspects of sampling from air, soil and water; detection and quantification of microbial and chemical unknowns in environmental media.
Prerequisite: Junior or senior classification or approval of instructor.

BESC 411 Environmental Health and Safety Compliance
Credits 3. 3 Lecture Hours. 1 Lab Hour.
Investigation of the legal infrastructure of the U.S. associated with environmental regulations. Review the relationship between U.S. policy and international environmental statutes associated with air and water quality, toxic substances, waste and hazardous substance release, energy and natural resources; review the relationship between U.S. policy and international environmental regulations.
Prerequisite: BESC 367 or similar regulation intensive course and approval of instructor.

BESC 481 Seminar
Credit 1. 1 Lecture Hour.
Capstone course for topics in bioenvironmental sciences; critical analysis of environmental issues through written themes and presentations. May be taken three times for credit.
Prerequisites: BESC 201 and senior classification in BESC major.

BESC 484 Field Experience
Credits 1 to 4. 1 to 4 Other Hours.
An on-the-job supervised experience program conducted in the area of the student’s specialization.
Prerequisite: Junior or senior classification or approval of department head.

BESC 485 Directed Studies
Credits 1 to 4. 1 to 4 Other Hours.
Special problems for advanced undergraduates to permit study of subject matter not available in existing courses.
Prerequisite: BESC 201 or approval of instructor.
BESC 489 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.
Selected topics in an identified area of bioenvironmental sciences. May be repeated for credit.
Prerequisite: BESC 201 or approval of instructor.

BESC 491 Research
Credits 1 to 4. 1 to 4 Other Hours.
Research conducted under the direction of faculty member in bioenvironmental sciences. May be repeated 3 times for credit. Registration in multiple sections of this course are possible within a given semester provided that the per semester credit hour limit is not exceeded.
Prerequisites: Junior or senior classification and approval of instructor.