

BIOLOGICAL SCIENCES

Programs

- Health Science, Bachelor of Science (<http://catalog.ben.edu/mesa-undergraduate/academic-programs/biological-sciences/health-science-bs/>)

Courses

Biology

BIOL 1116 Engaged Learning Experience in Biology. (Formerly 116) Opportunity for motivated students to work on a continuing or delineated project with a faculty member. Students will develop practical skills rooted in basic biology knowledge. Prerequisite: "C" or better in BIOL 1197 or 2297. Cross listed as INQ 1116/BIOL 1116. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Fall, Spring, and Summer Terms)
MESA (Typically Offered: Fall, Spring, and Summer Terms)

BIOL 1120 Genetics of Everyday Life. (Formerly 120) Introduces the non-science major to the classical principles of genetics. Emphasis is on human genetic disease and genetic biotechnology including social, cultural and ethical implications. IAI L1906 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1124 Human Health and Disease. (Formerly 124) Human Health and Disease is designed to introduce students to the general concepts of health and human diseases. The major goal of this course is to cover main principles of disease presentation, risk factors, diagnosis, treatment, and prevention. Diseases and physiological systems will vary from semester to semester. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1134 Biology of Non-Human Primates. (Formerly 134) This course is an introduction to the biology and behavior of non-human primates. Specifically, we will focus on the characteristics that define the primate order and examine the similarities and differences among the various groups of primates, including lemurs, lorises, tarsiers, monkeys and apes. Additionally, topics such as growth and development, cognition and communication, diet and feeding strategies and mating patterns will be explored. This course emphasizes scientific methodology and critical thinking. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1135 Forensics. (Formerly 135) Fundamental principles and methods of biological forensics. Intended for non-biology majors. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1140 Origins of Humanity. (Formerly 140) Introduction to human evolution. Introduces the nonscience major to what the fossil record reveals, the place of humans in the natural world and the biological reasons for modern human physical variation. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1144 Science at the Movies. (Formerly 144) An investigation of a wide variety of current scientific topics such as genetic engineering, space exploration and epidemiology through the lens of popular films and television. Students will learn the science behind the stories and critically consider how science and scientists are presented in popular media. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA

BIOL 1150 Biology of Women. (Formerly 150) Discusses biology of gender with special emphasis on the physical structure, function and health concerns of women. The intention is that both women and men understand the complex functioning of the female body and women's unique health issues. Intended for non-biology majors. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1155 Anatomy and Physiology. (Formerly 155) Integrated approach to structure and function of the human body. All the major organ systems will be studied. For physical education majors. Prerequisite: High School Biology and Chemistry. 4 semester credit hour/s. Department Consent Required.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Spring Term)
MESA (Typically Offered: Spring Term)

BIOL 1156 Introduction to Microbiology. (Formerly 156) An introductory study of bacteria, viruses and other microbes. Includes identification techniques, microbial genetics, immunology, growth and control, and an overview of those microbes important to humans. Does not meet requirements for majors or minors in Biology or Health Science. 4 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1157 Introductory Anatomy & Physiology I. (Formerly 157) First semester of a two-semester sequence dealing with the structure and function of the human body and mechanisms for maintaining homeostasis within it. Lecture and lab. Includes the study of cells, tissues, and the integumentary, skeletal, muscular and nervous systems. Does not meet requirements for majors or minors in Biology or Health Science. 4 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)
MESA (Typically Offered: Periodically)

BIOL 1158 Introductory Anatomy & Physiology II. (Formerly 158) Second semester of a two-semester sequence dealing with the structure and function of the human body and the mechanisms for maintaining homeostasis within it. Lecture and lab. Includes study of the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems, as well as the concepts of development, metabolism, fluid and electrolyte balance, and acid-base balance. Does not meet requirements for majors or minors in Biology or Health Science. 4 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)

MESA (Typically Offered: Periodically)

BIOL 1160 Plagues and People. (Formerly 160) This is a course for non-biology majors, as an introductory survey of microbiology that focuses on plagues and their effects on people. It introduces students to collegiate-level thinking and investigating issues in science and biology. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 1165 Wine: Mystique and Madness. (Formerly 165) This course will explore wine making, including all phases of small scale wine production and the biology and chemistry of wine and wine production. For non-science majors. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 1180 The Ecology of a Changing Planet. (Formerly 180) Introduces the nonscience major to the basic ecological processes and science that are involved in many environmental concerns. IAI L1905 3 semester credit hour/s.

Designation: Sustainability; Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 1191 Selected Topics. (Formerly 191) Special topics in biology at an introductory level. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9.

Designation: Life Science Core Elective

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 1195 Principles of Organismal Lab. Methods and techniques of laboratory inquiry focused on organisms, evolution, and ecology. Prerequisite: Co-registration or credit in BIOL 1197 1 semester credit hour/s.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 1196 Introduction to Biology Lab. This course is designed with selected exercises to reinforce information learned in BIOL 1198, and to apply statistical and quantitative approaches to biology. This course does not meet the requirements for majors in the department of Biological Science. Coregistration or "C" or better in BIOL 1198 or equivalent and "C" or better in MATH 1110 or MATH 1105 or MATH 1108 or above. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall Term)

BIOL 1197 Principles of Organismal Biology. (Formerly 197) Key concepts in organismal biology on which advanced courses will build. Includes introduction to evolution, ecology, development, and reproduction and survey of bacteria, protists, fungi, plants, and animals. 3 semester credit hour/s.

Designation: Sustainability; Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 1198 Principles of Biology. (Formerly 198) Key concepts in biology on which advanced courses will build. Includes basic biological molecules, molecular biology, cell structure/function, transport processes, bioenergetics and genetics. For science majors. Prerequisite: Co-registration or credit in CHEM 1113 or CHEM 1103. 3 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 1199 Principles of Biology Lab. (Formerly 199) Methods and techniques of laboratory investigation. Co-registration or credit in BIOL 1198 and "C" or better in MATH 1110 or higher. 1 semester credit hour/s.

Designation: -

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 2201 Biological Anthropology. Focuses on forces producing humans in their present form. The study of evolution, population genetics, and the fossil record. Prerequisite: "C" or better in: BIOL 1197 or BIOL 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE

MESA

BIOL 2202 Introduction to Natural History Museums. (Formerly 202) Introduction to Nature History Museums examines the history, structure, organization, policies, and procedures of work in a natural history museum. This course includes a variety of topics: museum administration, collections management, curatorial practices, specimen preservation and conservation, emergency preparation and planning in museums, and the use of specimens in research, education, and exhibition. Prerequisite: "C" or better in BIOL 1197 or BIOL 2297, and instructor consent. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2204 Advanced Botany. (Formerly 204) A detailed study of the plant kingdom using a morphological and anatomical approach. Labs will consist of microscope slide work, dissections and aspects of plant ecology and physiology. Prerequisite: "C" or better in BIOL 1197 or BIOL 2297, BIOL 1198, CHEM 1103/CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 2205 Environmental Science. (Formerly ENVS 205) A survey of environmental science with an emphasis on global concerns, biological and physical resources, resource use, conservation issues, and the interactions among science, society, and the environment. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Designation: Sustainability

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 2206 Applied Exercise Science. (Formerly HLSC 200) This course covers key exercise science core principles from exercise physiology, kinesiology, biomechanics, and preventive health related fitness. Special emphasis will be given to the scientific principles and importance lifestyle for others through lifetime health related physical activity. Practical experience in the Exercise Physiology laboratory to complement the material covered during lecture. Students will participate both as subjects as well as testers. Prerequisite: For SES and ESS Majors only. "C" or better in BIOL 1155 or 1157. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall Term)

BIOL 2223 Field Studies in Biology. (Formerly 223) This course introduces students to the biological complexity of ecosystems through participatory field experiences in a range of locations. Field trips and exercises are led by faculty, and experts will lecture on a variety of topics which may include the natural history of regional biota, patterns of species diversity, ecology, and conservation. Some course sessions require international travel to the field site. Pre-requisite: "C" or better in BIOL 1197 or 2297, BIOL 1198, CHEM 1123. 3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 3.

Designation: Global

Campus: LISLE (Typically Offered: Spring Term)

BIOL 2228 Vertebrate Embryology. (Formerly 228) Developmental anatomy, genetics and physiology of vertebrates with emphasis on human development, pregnancy, and birth. Lecture and lab. Prerequisite: "C" or better in: BIOL 1195, 1197 or 2297, BIOL 1198, BIOL 1199, CHEM 1123. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2249 Parasitology. (Formerly 249) The morphology and life histories of animal parasites and their relation to the spreading of disease. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2250 Genetics. (Formerly 250) A survey course emphasizing Mendelian inheritance, molecular, cellular and medical genetics as well as current genetic research and its applications. Prerequisite of "C" or better in BIOL 1197 or 2297, BIOL 1198, CHEM 1113 and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 2251 Genetics Laboratory. (Formerly 251) Designed to illustrate principles formulated in BIOL 2250. Prerequisite: "C" or better in BIOL 1199 or 2299, co-registration or "C" or better in BIOL 2250. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 2260 Recombinant DNA Lab. (Formerly 260) Current techniques in manipulating DNA, such as PCR and subcloning, for expression of proteins. Gene and product will be isolated and used in subsequent experiments. This lab is intended for Biochemistry/Molecular Biology majors. Prerequisite: "C" or better in CHEM 1123 and credit or co-registration in BIOL 2250. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Spring Term)

BIOL 2271 Biology of Mammals. (Formerly 271) The habits, classification, life histories, and economic relations of North American mammals. Museum work. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2272 Zoology. (Formerly 272) An organized presentation of the animal kingdom. The class emphasizes the structure of animal traits and how they help the animal function as an integral whole entity.

A secondary goal is comparative anatomy of the animal classes.

Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2275 Invertebrate Zoology. (Formerly 275) Survey of major invertebrate animal groups through comparative study of their biodiversity, anatomy, physiology, development, and ecology. Focus on evolutionary relationships and importance of reproductive, development, feeding, mobility, skeletization, bilaterality, cephalization, terrestrialization, parasitism, and carnivory. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2279 Freshwater Ecology. (Formerly 279) Relationships between water, animals, plants and humans are investigated using the Shedd Aquarium as the laboratory. An introduction to the components of a freshwater habitat and a survey of the plants and animals that exist there, offered through the ACCA Cooperative College Program. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2281 ACCA Seminar. (Formerly 281) Evening seminar dealing with advanced topics in biology. Prerequisite: "C" or better in BIOL 1197 or 2297, BIOL 1198 and CHEM 1123. Topics are announced. 1 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 2283 Contemporary Ethnobotany. (Formerly 283) A study of the influence of plants on our economic, social and political history, and plants humans have chosen to protect and cultivate. Lab includes horticultural and identification work with economically important plants, and trips to plant conservatories. ACCA Cooperative College Botany Program with the Morton Arboretum. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2284 Woody Plants of the Western Great Lakes Region. (Formerly 284) An introduction to the composition and identification of the woody flora of the western Great Lakes region. The impact of geology, climate and soils on the development of woody flora will also be considered. ACCA Cooperative College Botany Program with the Morton Arboretum. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 4 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2285 Biology of Algae. (Formerly 285) An introduction to the algae, including the classification, structure and reproduction of major groups. Lab includes field collections and laboratory studies of local freshwater and soil algae. Practical applications in waste management, environmental monitoring and agriculture will be considered. ACCA Cooperative College Botany Program with the Morton Arboretum. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 4 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2286 Biology of the Fungi. (Formerly 286) An introduction to the fungi; including classification, structure, ecology, and identification of the significant groups. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2287 Plant Ecology. (Formerly 287) Examination of the structure/function relationships of plants to environmental factors, interrelationships of plant communities, laboratory and field techniques, and appropriate literature. ACCA Cooperative College Botany Program with the Morton Arboretum. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 4 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 2290 Marine and Island Ecology of the Bahamas. (Formerly 290) Exploration of habitats and animals found on and around the Bahamian Islands. Includes a nine-day field experience in the Bahamas. Course offered ACCA Cooperative College Program at the Shedd Aquarium. Prerequisite: "C" or better in BIOL 1197 or 2297, BIOL 1198, BIOL 1199 or 2299, CHEM 1123 and complete an external application to Shedd Aquarium. 4 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Spring Term)

BIOL 2291 Selected Topics. (Formerly 291) Special topics in biology chosen for the interests or needs of students. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 4 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 2292 Biology Teaching. (Formerly 292) Opportunity for motivated students that have demonstrated excellent ability in theoretical aspects and practical techniques covered in prior laboratory coursework with experience to (1) assist in the teaching of an undergraduate laboratory science course, (2) grade assignments and tests, and (3) prepare reagents and equipment for laboratory use. Maximum of 2 credits allowed towards major. 1 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 2293 Jurica Scholars ACCA Seminar. (Formerly 293) Jurica Scholars discussion section of ACCA seminar. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 2295 Independent Study. (Formerly 295) Provides opportunity for advanced major to pursue study in a field of biological interest. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 2296 Jurica Scholars Honors Project. Jurica Scholars version of independent study taken in conjunction with a 2000-level course. Prerequisite: "C" or better in BIOL 1198, BIOL 1197 or BIOL 2297, CHEM 1113, CHEM 1123 and co-registration in a 2000-level BIOL course. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 2297 Honors Organismal Biology. (Formerly 297) In-depth lecture and inquiry-based laboratory introduction to evolution, ecology, development, reproduction, and organismal structure/function for students in the Jurica Scholars Program. Prerequisite: "C" or better in BIOL 1198, CHEM 1113, Jurica Scholars Program students only. 4 semester credit hour/s.

Designation: Sustainability; Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Spring Term)

BIOL 2299 Quantitative Biology Laboratory for Transfer Students. (Formerly 299) Methods and techniques of biology laboratory investigation. Experimental design, data collection and statistical analysis, graphical representation of data, interpretation of results. Includes Biological Science Department orientation activities for transfer students. Credit may not be earned in BIOL 1199 and BIOL 2299 at Benedictine University. Required for transfer students majoring in the biological sciences. Prerequisite: Transfer credit for BIOL 1197, BIOL 1198, and BIOL 1199; co-registration in MATH 2229 and LCOM 1151. 1 semester credit hour/s.

Designation: Life-Scientific (QLS)

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 3203 Human Anatomy. Study of human organism structure through cadaver observation. Lecture and Lab. A biology major cannot receive credit for both BIOL 3203 and BIOL 3254. Prerequisite: "C" or better in BIOL 1197 or 2297, BIOL 1198, CHEM 1103/CHEM 1123. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA (Typically Offered: Fall and Spring Terms)

BIOL 3208 General Microbiology. Comprehensive survey of the biology of microorganisms, especially bacteria. Includes topics in growth, metabolism, physiology, taxonomy, ecology and biotechnology. Lecture and lab. Prerequisite [Main Campus]: "C" or better in BIOL 1197 or 2297, BIOL 1198, CHEM 1103/CHEM 1123. [Mesa campus]: "C" or better in BIOL 1196, BIOL 1197 or 2297, BIOL 1198, and CHEM 1103. 4 semester credit hour/s.

Designation: Writing Intensive; Engaged Learning

Campus: LISLE (Typically Offered: Fall and Spring Terms)

MESA

BIOL 3216 Human Anatomy and Physiology I. A basic course in the biology of the human body including study of cell and tissue structure and function, along with the energy concepts of the human. This is followed by a detailed presentation of the skeletal, muscular, integumentary, and nervous systems including the special senses. Laboratory work will be correlated with lecture material. Prerequisites: "C" or better in BIOL 1197, BIOL 1198, and CHEM 1123. 4 semester credit hour/s.

Campus: MESA

BIOL 3217 Human Anatomy and Physiology II. A continuation of BIOL 3216 with detailed study of structure and function of the circulatory, respiratory, digestive, excretory, endocrine, immune and reproductive systems, with correlated laboratory activities. Prerequisites: BIOL 3216; (three lecture hours and one three-hour lab weekly). 4 semester credit hour/s.

Campus: MESA

BIOL 3230 Plant-Soil Relationships. (Formerly 230) Topics include effects of soil on plant growth and nutrition and how plants affect the soil. ACCA Cooperative College Botany Program with the Morton Arboretum. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 3 semester credit hour/s. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)

BIOL 3256 Comparative Animal Physiology. (Formerly 256) A study of basic life functions in animals emphasizing the mechanisms for maintenance of homeostasis in response to environmental factors such as water and dehydration, salts and ions, temperature, light, and daily and seasonal rhythms. Prerequisite of "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1103 or 1123. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Spring Term)
MESA

BIOL 3258 Human Physiology. (Formerly 258) The study of the control and function of human organ systems. Lecture only. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1113 and 1123. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA

BIOL 3259 Human Physiology Laboratory. (Formerly 259) Lab uses standard clinical equipment to illustrate principles of physiology. Prerequisite: "C" or better in BIOL 1199 or 2299 and credit or co-registration in BIOL 3258 or 3256. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA (Typically Offered: Fall and Spring Terms)

BIOL 3300 Ecology of Lakes and Streams. (Formerly ENV5 300) The study of the interrelations among the physical, chemical, and biological components of freshwater ecosystems. Includes taxonomy, adaptations, distributions, and abundance of aquatic organisms. Prerequisite: "C" or better in CHEM 1123 and one of: BIOL 2201, BIOL 3203, or BIOL 2250. 3 semester credit hour/s.

Campus: LISLE

BIOL 3301 Human Evolution. An in-depth look at the physical and behavioral evolution of humans. This course will focus primarily on the human fossil record from seven million years ago to the origin of Homo sapiens, with concentration on the functional anatomy of early humans. Prerequisite: "C" or better CHEM 1123 and one of: BIOL 2201 or BIOL 3203 or BIOL 2250. 3 semester credit hour/s.

Designation: -

Campus: LISLE (Typically Offered: Periodically)
MESA

BIOL 3313 Evolution. (Formerly 313) A study of evolutionary processes, including Darwinian and non-Darwinian evolutionary theory, genetic mechanisms, social issues, and the role of natural selection in the formulation of species and higher categories. Emphasis is placed on the phylogeny of major animal groups. Prerequisite: "C" or better in BIOL 2250 and CHEM 1123. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall Term)
MESA

BIOL 3330 Plant-Animal Interactions. (Formerly 330) Plant – Animal Interactions is the study of the special ecological and evolutionary relationships between plants and animals. The basic interactions between plants and animals (herbivore, pollination, and seed dispersal) will be studied by observing the natural history, conducting experiments, making observations, investigating the theories, and discussing current scientific literature. Course Prerequisite: CHEM 1123 and one of: BIOL 2204, BIOL 3256, BIOL 3258, BIOL 3301, BIOL 4363 or CHEM 3261. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 3370 Animal Behavior. (Formerly 370) A study of how and why animals act and react in their environment, with an emphasis on the evolutionary and ecological aspects. Topics covered include neural mechanisms of behavior, learning, game theory, foraging, communication, reproductive behavior and mating systems, and social behavior. Prerequisite: "C" or better in CHEM 1123, BIOL 2250 and BIOL 3256 or BIOL 3258. 3 semester credit hour/s.

Designation: -

Campus: LISLE (Typically Offered: Periodically)

BIOL 3389 Biological Research. (Formerly 389) Research projects which require extensive use of laboratory or museum facilities. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, CHEM 1113, and CHEM 1123. Does not count towards Health Science or (BA) Biology majors. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Fall, Spring, and Summer Terms)

BIOL 3391 Selected Topics. (Formerly 391) Special courses on various topics with which the student has not become acquainted in formal course work. May be an extension of or a supplement to material previously encountered, or lectures from a completely new area. Prerequisite: Instructor consent and "C" or better in CHEM 1123 and one of BIOL 2204, BIOL 2205, BIOL 3208, BIOL 2250, BIOL 3258, BIOL 2272, BIOL 3313, or BIOL 4363. 1-4 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Designation: -

Campus: LISLE (Typically Offered: Periodically)
MESA

BIOL 3395 Independent Study. (Formerly 395) Provides opportunity for advanced major to pursue study in a field of biological interest. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, CHEM 1113, and CHEM 1123. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9. Department Consent Required.

Campus: LISLE (Typically Offered: Periodically)
MESA

BIOL 3396 Jurica Scholars Honors Project-Advanced. (Formerly 396) Jurica Scholars version of independent study taken in conjunction with a 3000-level course. Prerequisite: "C" or better in BIOL 1198 and BIOL 2297, co-registration in a 3000-level course. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 3397 College of Science Research Techniques. (Formerly 397) This is a zero credit research course training students in the skills needed for research or museum projects in the natural sciences. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Fall, Spring, and Summer Terms)

BIOL 3399 Jurica Scholars Capstone. (Formerly 399) Semester-long preparation and research for the Jurica Scholars Capstone project/paper to be completed in the senior year. Pre-requisite: "C" or better in BIOL 1198 and BIOL 2297. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Spring Term)

BIOL 4303 Conservation Biology and Biodiversity. This course focuses on the study of biological diversity, its rapid loss in recent decades, and approaches for its conservation. Students will focus on primary literature in this course, with an emphasis on interpretation of empirical data, and design of investigations in conservation biology. Pre-requisites: "C" or better in MATH 2229 and BIOL 2250; "C" or better in BIOL 4363 strongly recommended. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 4322 Paleobiology. (Formerly 322) Using fossils to understand the evolutionary and ecological history of life. Topics such as mass extinctions, evolutionary diversifications, quantification of evolutionary rates, microevolution and speciation in the fossil record, evolutionary development, evolutionary transitions, fossilization, climate change, competition, functional morphology, conservation biology, and long-term trends in evolution and ecology are covered. Prerequisites: "C" or better in MATH 2229 or BIOL 2204 or BIOL 2205 or BIOL 2275 and CHEM 1123. 4 semester credit hour/s.

Campus: LISLE (Typically Offered: Periodically)

BIOL 4340 Cell Biology. (Formerly 340) The study of life processes at the level of molecules, macromolecules, subcellular particles and organelles; integration of structure and function of living things on the suborganismic level. Prerequisite: "C" or better in BIOL 2250 and CHEM 2242. 3 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA

BIOL 4341 Cell Molecular Biology Laboratory. (Formerly 341) Techniques in cell and molecular biology. Prerequisite of "C" or better in BIOL 1199 or 2299; credit or co-registration in BIOL 4340. 1 semester credit hour/s.

Designation: Writing Intensive

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 4342 BMB Cell Biology Laboratory. (Formerly 342) Laboratory research problems in cell biology, including literature review, experimental design, data gathering, and evaluation of results. Students keep a laboratory journal, write a formal journal-style report about their research, and present their work orally in a research symposium. Intended for the BMB major. Prerequisite: Credit or co-registration in BIOL 4340 and CHEM 3261. 2 semester credit hour/s. Department Consent Required.

Designation: Writing Intensive

Campus: LISLE (Typically Offered: Spring Term)

BIOL 4360 Basic Endocrinology. An integrative study of the structure and function of the human endocrine system. Prerequisite: "C" or better in BIOL 3256 or 3258. 3 semester credit hour/s.

Campus: LISLE

BIOL 4363 Ecology. (Formerly 363) Study of the relationships of organisms to one another and to their environment. Includes evolutionary, behavioral, population, community, ecosystem, and applied ecology. Prerequisite: "C" or better in BIOL 2205 or BIOL 2250; MATH 2210 or higher. 3 semester credit hour/s.

Designation: Sustainability

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 4364 Ecology Laboratory. (Formerly 364) A field and laboratory course designed to illustrate the principles of basic and applied ecology. Includes field trips, computer simulations, observational studies, and the design and implementation of ecological experiments. Prerequisite of "C" or better in MATH 2229, credit or co-registration in BIOL 4363. 1 semester credit hour/s.

Designation: Writing Intensive; Engaged Learning

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 4393 Great Ideas in Biology and Medicine. (Formerly 393) A study in the original writings of some of the great biologists and medical scientists to understand their thoughts and work and the historical development of the scientific method in biology. Capstone course for HLSC majors on the Main Campus. Prerequisites: "C" or better in BIOL 1197 or 2297, BIOL 1198, and CHEM 1123; 90 credit hours standing. 1 semester credit hour/s.

Designation: Writing Intensive

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 4394 Nature Writing. (Formerly 394) This course will introduce the literary genre of Nature Writing and explore its ongoing relationship with science. This interdisciplinary course will explore the nature writing of the past and other cultures, as well as trends leading to its future. May be taken as the capstone course for HLSC majors. Prerequisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, and CHEM 1123. 1 semester credit hour/s.

Designation: Writing Intensive; Sustainability

Campus: LISLE (Typically Offered: Spring Term)
MESA

BIOL 4489 Advanced Biological Research. Research projects which require extensive use of laboratory or museum facilities. Pre-requisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, CHEM 1113, and CHEM 1123. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 9.

Campus: LISLE (Typically Offered: Fall, Spring, and Summer Terms)

BIOL 4491 Selected Topics. Special courses on various topics with which the student has not become acquainted in formal course work. May be an extension of or a supplement to material previously encountered, or lectures from a completely new area. Pre-Requisite: Instructor consent and "C" or better in CHEM 1123 and one of BIOL BIOL 2204, BIOL 2250, BIOL 3258, BIOL 2272, BIOL 3313, or BIOL 4363. 1-4 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 50.

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 4496 Jurica Scholars Project - Acclereated. Jurica Scholars version of independent study taken in conjunction with a 4000-level or above course. 0 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 0. Department Consent Required.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

BIOL 4497 Biology Internship. Practical experiences in the life sciences under the supervision of the biology faculty. Pre-Requisite: "C" or better in: BIOL 1197 or 2297, BIOL 1198, CHEM 1113, and CHEM 1123. 1-3 semester credit hour/s.

Designation: Engaged Learning

Campus: LISLE (Typically Offered: Periodically)

MESA

BIOL 4499 Jurica Scholars Senior Capstone. Completion of semester-long preparation and research for the Jurica Scholars Capstone project/paper and presentation to be completed in the senior year. Pre-Requisite: "C" or better in BIOL 1198, BIOL 2297, and BIOL 3399. 1 semester credit hour/s.

Campus: LISLE (Typically Offered: Fall and Spring Terms)

Faculty Faculty

Preston Aldrich (2004), Ph.D.

Biological Sciences

Professor, Biological Sciences

Ph.D., 1997, Botany, University of Georgia, Athens

M.S., 1991, Botany, University of Minnesota, St. Paul

B.A., 1987, Chemistry, St. Olaf College

Ian Hall (2016), Ph.D.

Director of Undergraduate Programs, Biological Sciences

Associate Professor, Biological Sciences

Ph.D., 2010, Biology: Ecology, Evolution, and Behavior, Indiana University

B.S., 2004, Biological Sciences, University of Maryland Baltimore County

Leigh Anne Harden (2015), Ph.D.

Biological Sciences

Associate Professor, Biological Sciences

Ph.D. 2013, Marine Biology, University of North Carolina Wilmington

B.S. 2007, Biology, Davidson College

Cheryl Heinz (2004), Ph.D.

Department Chair, Biological Sciences

Associate Professor, Biological Sciences

Ph.D., 2002, Entomology, Cornell University

B.S., 1993, Honors Biology, University of Illinois at Urbana

William Law (2018), Ph.D.

Biological Sciences

Professor, Biological Sciences

PhD 1985, Physiology and Biophysics, University of Illinois Med. Ctr.

Chicago

BA 1979, Augustana College, Rock Island, IL

Mark Poch (2013), Ph.D.

Biological Sciences

Associate Professor, Biological Sciences

Ph. D. 1990 Biochemistry, Rush University, IL

B.A. 1984, Biology, Ripon College, WI

Jayashree Sarathy (2010), Ph.D.

Director of Graduate Programs, Biological Sciences

Professor, Biological Sciences

Ph.D. 1999, Physiology, University of Illinois at Chicago

M.Phil. 1991, University of Madras, India

M.S. 1990, University of Madras, India

B.S. 1988, University of Madras, India

Regina Schurman (2007), Ed.D., ACSM-CEP, C.P.A.

Director of Pre-Health Professions, Biological Sciences

Assistant Professor, Biological Sciences

Ed.D. 2012, Higher Education and Organizational Change, Benedictine University

M.S. Clinical Exercise Physiology, 2007, Benedictine University

B.S. Accountancy 1991, DePaul University

A.A.S. Data Processing 1984, Oakton Community College

Lee Ann Smith (2004), Ph.D.

Biological Sciences

Professor, Biological Sciences

Ph.D. 2004, Biomedical Science, University of Connecticut Health Center

B.S. 1997 Biochemistry, Benedictine University

Lecturers

Madhavi Chakravadhanula, Ph.D.

Lecturer, Biological Sciences

Majid Ghaninia-Tabarestani, Ph.D.

Lecturer, Biological Sciences

Manjari Mishra, Ph.D.

Lecturer, Biological Sciences

Roli Prasad, Ph.D.

Lecturer, Biological Sciences

Jennifer Salutric, M.S.

Lecturer, Biological Sciences

Sandhya Verma, Ph.D.

Lecturer, Biological Sciences

Debra Wollner, Ph.D.

Lecturer, Biological Sciences

The lecturers listed are individuals who have been employed as instructors on an as-needed basis, within the last several years, to teach courses at Benedictine University. Instructors listed may not currently be employed by Benedictine University. The University is fortunate to be able to provide our students with part-time faculty whose experience, credentials and commitment to education add to the high quality of our resident faculty.