

100-level 4 hour lab science courses currently listed in the 18/19 JU catalog

BIOL 100. Principles of Biology (4)

Three hours lecture per week. Co-requisite: BIOL 100L. This course cannot be used as a prerequisite for any other Biology course. An introductory overview of the diversity and characteristics of life and living organisms. Structural and functional parameters as well as interactive relationships are emphasized.

BIOL 100L. Principles of Biology Lab (0)

Two hours laboratory per week. Required co-requisite for BIOL 100. An introduction to the scientific method and exploration.

BIOL 125. Ecology of Man (4)

Three hours lecture and two hours laboratory per week. Prerequisite: None. An overview of the primary ecological concepts and how these apply to the problems facing the human species. Population, pollution, energy and man's effect on other species will be discussed. Field trips and quantitative techniques in ecology will be included.

BIOL 127. Ornithology (4; S)

Three hours lecture and two hours laboratory per week. Prerequisite: None. An introduction to the study of birds, including their unique characteristics as well as their suitability for demonstrating such biological principles as adaptation, behavior and evolution. Emphasis will be placed on local species, and the two-hour session will include field trips, films and identification of study skins. Binoculars are required (8x or greater).

BIOL 170. Introduction to Ecology and Evolution (4) *this is still in the catalog; not sure if we are still offering it?*

Three hours lecture and three hours lab per week. Prerequisite: None. An introduction to ecological and evolutionary principles shaping the biota and ecosystems of the earth. An introduction to applications of quantitative techniques in ecology and evolution will be included in both lecture and laboratory.

BIOL 180. Biological Diversity (4; F/S)

Three hours lecture and three hours lab per week. Prerequisite: None. Intended for biology and life science majors and minors only. A study of the Earth's biological diversity. BIOL 180 is an organismal biology course focusing on the structure, function, ecology, and evolution of bacteria, fungi, plants, and animals. Laboratory exercises reinforce topics discussed in lecture.

BIOL 189. Core Seminar (4) *Is it assumed here that a lab is part of this course when it is offered?*

The seminar is an intensive study of a topic from the perspective of a particular discipline. The course introduces students to basic research principles and methods appropriate to the discipline. All seminar courses include research assignments appropriate to the 100 level. Seminars also emphasize discipline-appropriate communication skills, including writing, oral presentation, and/or artistic expression. Seminars may be cross-listed to promote inter-disciplinary studies. May be repeated for credit when topic is different.

CHEM 101. Introductory College Chemistry (4; F/S)

Six hours integrated lecture/laboratory per week. This course cannot be used as a prerequisite for any other chemistry course. This course is an introduction to the study of chemistry and chemical principles with emphasis on the applications of chemistry to everyday life. Topics covered include atomic and

molecular structure, chemical bonding, stoichiometry, gases, solutions, equilibria, kinetics, and nuclear chemistry.

CHEM 103. General Chemistry I (4; F)

Six hours integrated lecture/laboratory per week. Prerequisite: A "C" or better in MATH 104 or placement in a core mathematics course. This course is geared towards science majors, and is designed to provide an in-depth understanding of the principles associated with atomic and molecular structure, chemical bonding, energy of reaction, stoichiometry, and nuclear chemistry.

CHEM 104. General Chemistry II (4; S)

Six hours integrated lecture/laboratory per week. Prerequisite: A "C" or better in CHEM 103. This course is geared towards science majors, and is designed to provide an in-depth understanding of the principles associated with the states of matter, chemical kinetics, chemical equilibrium, spontaneity of chemical reactions, oxidation-reduction reactions, and electrochemistry.

CHEM 189. Core Seminar (4) is a lab included?

The seminar is an intensive study of a topic from the perspective of a particular discipline. The course introduces students to basic research principles and methods appropriate to the discipline. All seminar courses include research assignments appropriate to the 100 level. Seminars also emphasize discipline-appropriate communication skills, including writing, oral presentation, and/or artistic expression. Seminars may be cross-listed to promote inter-disciplinary studies. May be repeated for credit when topic is different.

ENV 101. Introduction to Environmental Studies (4) I know this is offered in ADP; would it ever be an option for traditional students?

Three hours lecture and three hours laboratory per week. A multidisciplinary introductory course. Topics covered will prepare students for classes in biology, chemistry, geography and marine science. Course examines the important concepts and topics in environmental studies. Invited lectures will add expertise and perspective of many disciplines. Students will read papers on current issues, conduct searches of the primary literature, and search World Wide Web sources to enhance their understanding of special topics. They will learn through exploration the diversity of public regulatory and private organizations active in the field.

MSC 101. Introduction to Marine Science (4) still in the catalog; is it still being offered?

Three hours lecture and three hours laboratory per week. This course will introduce students to the broad interdisciplinary field of marine science. Physical, chemical and biological oceanography will be presented in interactive classes and laboratory exercises. Relevant topics, such as local coastal systems, tropical-temperature transitions, and environmental issues will be discussed. Field trips will explore local ecosystems.

MSC 111. Introduction to Oceanography (3)

Three hours of lecture per week. Co-requisite: MSC 112. This course explores the origin of the earth and oceans, geological processes on earth, geologic time, plate tectonics, ocean-atmosphere coupling, ocean circulation, waves and tides, seawater and sediment composition, and influences on and from the biological realm.

MSC 112. Introduction to Oceanography Laboratory (3)

Three hours of laboratory per week. Co-requisite: MSC 111. Field and laboratory exercises to

demonstrate the physical oceanographic and geologic realm of Earth. Introduction to sampling methods, physical coastal sites and landforms, and water analysis.

MSC 113. Introduction to Marine Biology (3)

Three hours of lecture per week. Co-requisite: MSC 114. This course introduces students to the biology and diverse array of marine organisms and plants to students. There will be an emphasis on the adaptive and evolutionary mechanisms by which organisms are able to occupy the various marine habitats.

MSC 114. Introduction to Marine Biology Laboratory (3)

Three hours of laboratory per week. Co-requisite: MSC 113. Three hours of laboratory per week. The laboratory will reinforce the biological concepts and diversity presented in lecture. It will also expose students to laboratory and field techniques commonly used to investigate the biology and/or ecology of marine organisms and plants.

MSC 189. Core Seminar (4) does this course include a lab?

The seminar is an intensive study of a topic from the perspective of a particular discipline. The course introduces students to basic research principles and methods appropriate to the discipline. All seminar courses include research assignments appropriate to the 100 level. Seminars also emphasize discipline-appropriate communication skills, including writing, oral presentation, and/or artistic expression. Seminars may be cross-listed to promote inter-disciplinary studies. May be repeated for credit when topic is different.

PHYS 100. Conceptual Physics (4)

Six hours of integrated lecture/laboratory per week. An introduction to fundamental concepts in physics with emphasis on devices and applications. Topics include motion, energy, momentum, matter and waves as applied to one or more of the major subfields of physics. Fundamental knowledge of algebra recommended.

PHYS 104. Astronomy (3)

Three hours per week. A study of the behavior of astronomical systems. Topics include understanding observations made from a moving reference frame such as the earth, the development of modern astronomy, telescopes, the solar system, stars and stellar evolution, galaxies, cosmology and life in the universe.

PHYS 111. Principles of Physics I (4; F)

Six hours of integrated lecture/laboratory per week. Co-requisite: MATH 110 or MATH 112. Measurement and error analysis. An algebra-based treatment of classical mechanics, including kinematics and dynamics of translational and rotational motion, oscillations, waves and fluids.

PHYS 112. Principles of Physics II (4; S)

Six hours of integrated lecture/laboratory per week. Prerequisite: PHYS 111. An algebra-based treatment of electricity and magnetism, AC and DC circuits and geometrical optics.

PHYS 116. Astronomy Laboratory (1)

Three hours laboratory per week. Co-requisite: PHYS 104. Selected experiments in astronomy, optics, radiation, and orbital mechanics.

PHYS 125. Aviation Physics (4; F/S)

Six hours of integrated lecture/laboratory per week. Co-requisite: MATH 110 or MATH 112. This course will not serve as a prerequisite for PHYS 112 or PHYS 152. An algebra/trigonometry based treatment of

principles of physics relevant to aviation science, including mechanics, thermodynamics, fluid dynamics, and electromagnetism, with application to pneumatic, hydraulic, electric, and mechanical instrumentation and controls.

PHYS 151. General Physics: Mechanics (4; F/S)

Six hours of integrated class and laboratory per week. Co-requisite: MATH 140. This calculus-based course introduces students to the major themes and principles of mechanics (forces, energy, linear and angular momentum, and conservation laws) and their applications in the context of translational motion, rotational motion, and thermodynamics. Students will be guided in the basics of computational, experimental, and/or theoretical physics practice.

PHYS 152. General Physics: Electricity & Magnetism (4; F/S)

Six hours of integrated class and laboratory per week. Prerequisite: A "C" or better in PHYS 151; co-requisite: MATH 141. This calculus-based course introduces students to the major themes and principles of electricity and magnetism (fields, potentials, and Maxwell's equations) and their applications in the context of charge distributions, current distributions, circuits, and optics. Students will be guided in the basics of computational, experimental, and/or theoretical physics practice.

PHYS 189. Core Seminar (4) again, is a lab included?

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