

# BIOLOGY (BIOL)

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## **BIOL 526 Topics In Biology (3 Credits)**

**Lecture: 3, Lab: 0**

Topics in Biology (3) Discussion of published papers covering a broad spectrum of biological disciplines. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology, chemistry or toxicology).

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 527 Adv Plant Physiology (3 Credits)**

**Lecture: 3, Lab: 0**

Advanced Plant Physiology (3) Consideration of the chemistry and biochemistry of plant growth and development with emphasis on growth regulators, plant mineral nutrition, nitrogen-fixation, photosynthesis and photoperiodism. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology, chemistry or toxicology).

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 528 Hist Of Sciences (2 Credits)**

**Lecture: 2, Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 534 Entomology (3 Credits)**

**Lecture: 2, Lab: 3**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 534L Entomology Lab (0 Credits)**

**Lecture: 0, Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 623 Neurobiology (3 Credits)**

**Lecture: 3, Lab: 0**

Neurobiology (3) Structure and function of the brain and of the nervous system as a whole with emphasis on cellular and molecular mechanisms. Lectures, discussion, student reports. Three (3) hours of lecture per week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 631 Diagnostic Bacteriology (3 Credits)**

**Lecture: 3, Lab: 0**

Diagnostic Bacteriology (3) Fundamental training in isolation and identification of microorganisms obtained from a clinical laboratory specimen. One (1) hour of lecture per week and two (2) three-hour laboratory classes. (Prerequisite: BIOL 347)

**Prerequisite(s):** (BIOL 347)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 631L Diag Bact Lab (0 Credits)**

**Lecture: 0, Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 636 Endocrinology (3 Credits)**

**Lecture: 3, Lab: 0**

Endocrinology (3) Through lectures and discussions an examination of the glands of internal secretion with special reference to humans. Three (3) hours of lecture per week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 645 Animals In Biomed Research (4 Credits)**

**Lecture: 2, Lab: 3**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 645L Animals Biomed Res Lab (0 Credits)**

**Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 647 Experimental Biology (4 Credits)**

**Lecture: 2, Lab: 6**

Experimental Biology I (4) Current topics in biological research utilizing published literature as lecture material and as the basis for student presentations and experimentation. One (1) hour of lecture and four (4) hours of laboratory a week. (Prerequisite: Graduate standing in biology.)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 647L Experimental Biol Lab (0 Credits)**

**Lecture: 0, Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 648 Experimental Biology (4 Credits)**

**Lecture: 2, Lab: 6**

Experimental Biology II (4) A continuation of Biology 647, emphasizing the application of modern biological, chemical and physical methods to the study of the biological sciences. One (1) hour of lecture and four (4) hours of laboratory a week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 648L Experimental Biol Lab (0 Credits)**

**Lecture: 0, Lab: 0**

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 650 Enzymology (3 Credits)**

**Lecture: 3, Lab: 0**

Enzymology (3) A study of enzyme classification, structure, kinetic models, rapid and relaxation kinetics for complex enzyme mechanisms. Three (3) hours of lecture. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 710 Microbial Genetics (3 Credits)**

**Lecture: 3, Lab: 0**

Microbial Genetics (3) An examination of the nature, expression and regulation of the genetic process in microorganisms. Three (3) hours of lecture a week; (Prerequisite: Graduate standing in biology).

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

## **BIOL 712 Biosynthetic Mech (3 Credits)**

**Lecture: 3, Lab: 0**

Biosynthetic Mechanisms (3) Molecular processes involved in the DNA function, biosynthesis replication, translation, transcription; biochemical mechanisms in RNA synthesis and protein biosynthesis. Molecular aspects of evolution and carcinogenesis. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech

**Department:** Department of Biology

**BIOL 715 Advanced Human Genetics (3 Credits)****Lecture:** 3

Advanced Human Genetics (3) Comprehensive treatment of various normal aspects of human heredity as well as those aspects due to abnormal inheritance causing malfunctioning in metabolism. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 725 Biochemical Ecology (3 Credits)****Lecture:** 3, **Lab:** 0

Biochemical Ecology (3) An advanced in depth biochemical study of structure and function of ecosystems and of their changes due to natural and anthropogenic causes. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology, chemistry, or toxicology)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 735 Tech in Electron Microscopy (4 Credits)****Lecture:** 4**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 775 Bio-Organic Chemistry (3 Credits)****Lecture:** 3, **Lab:** 0

Bio-Organic Chemistry (3) A comprehensive treatment of the structure and function of various organic compounds occurring in living organisms. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology, chemistry, or toxicology)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 777 Biophysics (3 Credits)****Lecture:** 3, **Lab:** 0

Biophysics (3) A comprehensive treatment of the concepts in physics and physical chemistry as applicable to biological systems. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology or chemistry)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 785 Adv Plant Physic & Biochem (3 Credits)****Lecture:** 3, **Lab:** 0

Advanced Plant Physiology and Plant Biochemistry (3) An indepth treatment of photosynthesis, photoperiodism, nitrogen-fixation and plant molecular biology. Three (3) hours of lecture a week. (Prerequisite: Graduate standing in biology)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 795 Graduate Biology Seminar (3 Credits)****Lecture:** 3, **Lab:** 0

Graduate Biology Seminar (3) Review and indepth critical discussion of current published papers in selected areas of biological and biochemical sciences. Three (3) hours of presentation a week. (Prerequisite: Graduate standing in biology, chemistry, or toxicology)

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 861 Research Problems I (3 Credits)****Lecture:** 0, **Lab:** 0

Research Problems (3) An individual investigation of a specific research problem in biological sciences through literature search and laboratory experimentation. Consent of the Department. Supervised by members of the Graduate Faculty.

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 862 Research Problems II (3 Credits)****Lecture:** 0, **Lab:** 0

Research Problems II (3) A continuation of BIOL 861. Required of all candidates for the degree of Master of Science in Biology. An individual investigation of a specific research problem in biological sciences through literature search and laboratory experimentation. Consent of the Department. Supervised by members of the Graduate Faculty. (Prerequisite: BIOL 861).

**Prerequisite(s):** (BIOL 861)**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 6331 Advanced Cell Biology (3 Credits)****Lecture:** 3

Intensive exploration of the molecular mechanisms involved in eukaryotic cell. Students will gain an understanding of the complexities of cell through exploration of topics related to biological chemistry, cell structure and function, cellular metabolism, and genetics. The course is presented in one three-hour lecture per week.

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 6332 Advanced Bioinformatics (3 Credits)****Lecture:** 3

To expose students to computer-based programs useful for big data proc. Useful for processing high-throughput big data, data mining and fundamental procedures that help in understanding and characterizing biological systems. Lectures, demonstrations and student interactions using online computer tools to interrogate Big data generated from biological systems.

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 6352 Principles of Biochemistry (3 Credits)****Lecture:** 3

Detailed and advanced exploration of molecular composition, molecular mechanisms of energy changes, enzyme function, metabolism in eukaryotic cells, and its regulation. Some implications in the mechanism of diseases based on metabolic disorders will be covered.

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology**BIOL 6354 Cancer Biology (3 Credits)****Lecture:** 3

Examines the biology of cancer. Includes lectures and student presentations. Emphasis is on molecular and cellular events, such as cell cycle regulation, telomerase activity, cell signaling, growth factors and receptors, cancer metabolism and the Warburg effect, cell death. The latest approaches to cancer treatment will also be examined.

**College/School:** Col of Science, Engr & Tech**Department:** Department of Biology