

# Human Biology (HUM BIOL)

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## Courses

### **HUM BIOL 101. Introduction to Becoming a Scientist. 1 Credit.**

Learn about the challenges and rewards of a science major. Acquire essential professional skills using electronic databases and spread sheets that are needed by science majors. Learn about current science and the culture of scientists.

P: Fr or So status only.

Fall and Spring.

### **HUM BIOL 102. Introduction to Human Biology. 3 Credits.**

Basic concepts, principles, and processes in human biology; the origin of life, evolution, cells, population, genetics, reproduction, disease, the anatomy and function of major organ systems in humans.

Fall and Spring.

### **HUM BIOL 116. First Aid and Emergency Care Procedures. 3 Credits.**

Student will learn all aspects of first aid training such as victim assessment and treating all types of illnesses and injuries; all skills for Professional Rescuer CPR; dealing with infectious diseases and their transmission.

Fall and Spring.

### **HUM BIOL 198. First Year Seminar. 3 Credits.**

Reserved for New Incoming Freshman.

### **HUM BIOL 202. Ethnic Minorities in Science. 3 Credits.**

The history and culture of science in the US will be examined, in order to understand what has led to the current under-representation of ethnic minorities in science. The often overlooked contributions of scientists who are members of ethnic minorities will be recognized.

Spring.

### **HUM BIOL 204. Anatomy and Physiology. 5 Credits.**

This lecture and laboratory course examines the fundamental structure and function of tissues, organs, and systems of the human body.

P: Biology 202 with at least a C grade; AND Env Sci 207 or conc enr or Hum Biol 207 or conc enr.

Fall and Spring.

### **HUM BIOL 205. Biotechnology and Human Values. 3 Credits.**

Examination of technological developments in biology and medicine, including genetic, behavioral, and organism modification and the moral and ethical concerns raised by such technologies.

P: Hum Biol 102 or Biology 202.

Fall and Spring.

### **HUM BIOL 206. Fertility, Reproduction, and Family Planning. 3 Credits.**

Factors that influence reproduction and fertility, i.e., physiological, psychological, social, cultural, and ethical; the methods available for limiting or increasing reproduction; the nature of family planning programs.

P: Hum Biol 102 or Biology 202.

Fall and Spring.

### **HUM BIOL 207. Laboratory Safety. 1 Credit.**

This course examines safety within the science laboratory with emphasis on practical application. Topics include current safety regulations, identification of hazards, chemical labeling and storage, waste management, personal protective equipment, ventilation, spill response, and biosafety.

P: Biology 202 or 203 or Chem 108, 211 or 212 or Hum Biol 204 or conc enr.

Fall and Spring.

### **HUM BIOL 208. Scientific Conditioning of the Athlete. 2 Credits.**

Interrelationships between growth and development and athletic participation by pre-adolescents, principles of physiology of exercise, and general and specific techniques of physical and psychological conditioning are studied.

P: Hum Biol 102 with a grade of C or better OR Biology 202 with a grade of C or better.

Fall and Spring.

### **HUM BIOL 210. Prevention and Treatment of Athletic Injuries. 3 Credits.**

Prevention, physical conditioning, strapping, properly fitted and designed equipment, condition of the competition site, conduct of practices, and respect of existing injuries; estimation the nature an extent of the injury, feasibility of moving the victim, immediate care at the scene, modes of required transport, sideline care, training room modalities, referral for definite diagnosis, and treatment of simple follow-up rehabilitation.

P: Hum Biol 102 with a grade of C or better OR Biology 202 with a grade of C or better.

Fall and Spring.

### **HUM BIOL 217. Human Disease and Society. 3 Credits.**

Impact of diseases in humans. Emphasizes the major diseases, their causes, individual effects, historical significance, and methods of control.

Fall and Spring.

**HUM BIOL 299. Travel Course. 1-4 Credits.**

Travel courses are conducted to various parts of the world and are led by one or more faculty members. May be repeated to different locations.

P: cons of instr & prior trip arr & financial deposit.

**HUM BIOL 310. Human Genetics. 3 Credits.**

The molecular basis of heredity, genetic diseases, and genetic technologies including cloning, genetic testing, and gene therapy will be evaluated.

P: Biology 202 with at least a C grade ; Chem 108 or 212 with at least a C grade.

Fall and Spring.

**HUM BIOL 324. The Biology of Women. 3 Credits.**

This course will examine the physiology of the adult female body and will address health issues that are unique to or different in women. Emphasis will be placed on the effects of female sex hormones on multiple processes (reproductive, nervous, endocrine, and cardiovascular) in the body.

P: Hum Biol 102 with at least a C grade or Biology 202 with at least a C grade.

Spring.

**HUM BIOL 331. Science and Religion: Spirit of Inquiry. 3 Credits.**

This course examines the differing world views of science and religion; origins of science in the Judeo-Christian West; sources of conflicts; domains of validity; and of limitations of science and religion. This course may not be used as upper-level elective credits for a Human Biology major or minor.

P: Hum Biol 102 with at least a C grade or Biology 202 with at least a C grade; and sophomore status

Spring.

**HUM BIOL 333. Principles of Sports Physiology. 3 Credits.**

This course emphasizes the applied aspects of (exercise) physiology. Major topics include physiological dimensions of athletic performance/fatigue, principles of training, gender and exercise, ergogenic aids, and environmental stress and exercise.

P: Hum Biol 204 with at least a C grade; OR Biology 202 with at least a C grade and Biology 203 with at least a C grade. REC: Hum Biol 350.

Spring.

**HUM BIOL 350. Exercise Physiology. 4 Credits.**

This course provides a physiological emphasis of the cardiorespiratory, muscular, and hormonal/metabolic responses to acute exercise and to chronic exercise training. The laboratory involves measurement and analysis of a variety of parameters related to physical exercise, e.g., blood pressure, EKG, oxygen consumption, and body composition.

P: Declared major or minor in Human Biology AND Math 260 AND Env Sci 207 or conc enr or Hum Biol 207 or conc enr.

Fall and Spring.

**HUM BIOL 351. Kinesiology. 4 Credits.**

This course provides an in depth study of the human musculoskeletal system as it pertains to movement of the body and/or its parts. There are three major components to this course - anatomy (detailed musculoskeletal anatomy), functional anatomy (understanding bodily movement in light of anatomical structure), and biomechanics (mathematical quantification of bodily movement, forces, etc.)

P: Declared major or minor in Human Biology AND Env Sci 207 or conc enr or Hum Biol 207 or conc enr.

Fall and Spring.

**HUM BIOL 401. Art and Science. 1 Credit.**

Examination of art and science as ways of knowing, including discussion of various points of view regarding the differences and similarities between the two.

P: Hum Biol 102 or Biology 202 or Biology 203

Spring.

**HUM BIOL 402. Human Physiology. 3 Credits.**

This course examines the physiologic functions of the major human organ systems. Topics include cell physiology; muscle, nervous, respiratory, circulatory, excretory, digestive, immune, and reproductive system functions; hormonal regulation pathways; and the role of physiology in diseases and medicine.

P: Hum Biol 204 with at least a C grade; OR Biology 202 with at least a C grade and Biology 203 with at least a C grade; OR transfer cse Biology 002; AND Chem 108 with at least a C grade or 212 with at least a C grade.

Fall and Spring.

**HUM BIOL 403. Human Physiology Laboratory. 1 Credit.**

This course examines fundamental physiologic principles in a laboratory setting. Topics will include histology; muscle and nerve functions; respiratory and cardiac functions; and urinary system function. Students will gain experience in the process of designing, evaluating and presenting experimental results and develop skills in the reading of scientific literature.

P: Declared major or minor in Hum Biology; AND Hum Biol 402 with at least a C grade or conc enr or Biology 346 with at least a C grade or conc enr; AND Math 260; AND Env Sci 207 or conc enr or Hum Biol 207 or conc enr.

Spring.

**HUM BIOL 405. Biotechnology and Ethics. 3 Credits.**

Examination of the science and ethics of biotechnology including genomics, eugenics, recombinant DNA technology, reproductive technology, stem cells, drugs, modified organisms, and treatment of diseases.

P: none; REC: Hum Biol 102 or Biology 202.

Fall and Spring.

**HUM BIOL 413. Neurobiology. 3 Credits.**

This course will cover the physiological and molecular mechanisms of nervous system function. Topics include neuroanatomy; development and differentiation of neuronal cells; chemical and electrical functions; synaptic pharmacology; sensory receptors; learning and memory; and various disease states and medical treatments.

P: Biology 303 with at least a C grade; and Hum Biol 402 with at least a C grade or Biology 346 with at least a C grade.

Fall Only.

**HUM BIOL 422. Immunology. 3 Credits.**

This course examines the mechanisms of vertebrate, particularly human defense against microbial invasion and cancer.

P: Biology 302 with at least a C grade or 307 with at least a C grade; Chem 212 with at least a C grade; and Math 260 with at least a C grade  
Spring Odd.

**HUM BIOL 423. Immunology Lab. 1 Credit.**

This laboratory course examines the mechanisms of innate and acquired immunity.

P: Hum Biol 422 or conc enr AND Env Sci 207 or conc enr of Hum Biol 207 or conc enr.

Spring Odd.

**HUM BIOL 426. Cancer Biology. 3 Credits.**

This course examines the genetic changes and molecular events that lead to abnormal cell growth and cancer. Topics covered include oncogenes, tumor suppressor genes, angiogenesis, invasion and metastasis, cancer stem cells, therapeutic approaches for cancer treatment, and cancer prevention.

P: Hum Biol 310 or Biology 303 with at least a C grade

Spring Even.

**HUM BIOL 427. Cancer Biology Laboratory. 1 Credit.**

In this inquiry-based laboratory course, students will use molecular and cellular techniques to conduct research projects that examine the hallmark characteristics of cancer cells.

P: Hum Biol 426 or concurrent enrollment

Spring Even.

**HUM BIOL 444. Endocrinology. 3 Credits.**

This course examines the major endocrine organs of the body and the processes that are controlled / integrated by hormones. Clinical examples of endocrine disease (e.g. diabetes, Graves disease) will be considered from the viewpoint of the insight they give to the understanding of endocrine physiology.

P: Hum Biol 402 with a C grade or better.

Spring.

**HUM BIOL 478. Honors in the Major. 3 Credits.**

P: min 3.50 all cses req for major and min gpa 3.75 all UL cses req for major.

Fall and Spring.

**HUM BIOL 495. Research in Human Biology. 1-5 Credits.**

Work closely with a faculty member to plan, perform, evaluate, and report on laboratory research in human biology or a related field.

P: Hum Biol 207 or Env Sci 207 and approval by faculty mentor.

Fall and Spring.

**HUM BIOL 497. Internship. 1-16 Credits.**

Supervised practical experience in an organization or activity appropriate to a student's career and educational interests. Internships are supervised by faculty members and require periodic student/faculty meetings.

P: jr st.

Fall and Spring.

**HUM BIOL 498. Independent Study. 1-4 Credits.**

Independent study is offered on an individual basis at the student's request and consists of a program of learning activities planned in consultation with a faculty member. A student wishing to study or conduct research in an area not represented in available scheduled courses should develop a preliminary proposal and seek the sponsorship of a faculty member. The student's advisor can direct him or her to instructors with appropriate interests. A written report or equivalent is required for evaluation, and a short title describing the program must be sent early in the semester to the registrar for entry on the student's transcript.

P: fr or so st with cum gpa > or = 2.50; or jr or sr st with cum gpa > or = 2.00.

Fall and Spring.

**HUM BIOL 499. Travel Course. 1-6 Credits.**

Travel courses are conducted to various parts of the world and are led by one or more faculty members. May be repeated to different locations.

P: cons of instr & prior trip arr & financial deposit.