

**Biology 1A: General Biology Lecture . (3 units)**

*Prerequisites: A grade of C- or better in Chemistry 3A or 112A; 1AL must be taken concurrently (unless exempt by major).*

*\*\*\*Effective fall 2013, prerequisites have changed to Chem 1A/1AL or equivalent with grade C- or higher, or a 4 or 5 score on the Chem AP test; Chem 3A or 112A recommended. Biology 1AL must be taken concurrently (unless exempt by major).*

General introduction to cell structure and function, molecular and organism genetics, animal development, form and function. Intended for biological sciences majors, but open to all qualified students. (F,SP,SU)

**Biology 1AL: General Biology Laboratory. (2 units)**

*Prerequisites: Must be taken concurrently with Biology 1A. (F,SP,SU)*

**MCB 11: Of Molecules and Man: A View for the Layman. (3 units)**

Students will receive no credit for 11 after taking Biology 1A, 11; Chemistry 3A-3B, 10 or 112A-112B, 112H.

Examination of molecular mechanisms that underlie normal functions of living organisms and ways in which those functions are disrupted by medical disorders and environmental agents. Designed to provide non-biologists with an understanding of modern biochemistry and the ways we control and alter the biology of our life and environment. (SP) *Alper*

**MCB 31: Genes, Antibodies, and Human Populations. (3 units)**

Students with credit for Biology 1A and 1B will not receive credit for 31.

An introduction for non-majors to some important concepts of modern biology, ranging from molecules to populations. 1) What is DNA and how does it serve as genetic material? 2) How does the immune system cope with exposure to disease-causing bacteria? 3) Can we determine the size of human population that the earth can sustain? (SP) *Wilt*

**MCB 32: Introduction to Human Physiology. (3 units)**

*Prerequisites: One year high school or college chemistry.* A comprehensive introduction to human cell biology. The course will concentrate on basic mechanisms underlying human life processes, including cells and membranes; nerve and muscle function; cardiovascular,

respiratory, renal, and gastrointestinal physiology; metabolism, endocrinology, and reproduction. (F)

### **MCB 32L: Introduction to Human Physiology Laboratory. (2 units)**

*Prerequisites:* 32 or may be taken concurrently. Experiments and demonstrations are designed to amplify and reinforce information presented in 32. Exercises include investigations into the structure and function of muscle, nerve, cardiovascular, renal, respiratory, endocrine, and blood systems. (F)

### **MCB 41: Genetics and Society . (3 units)**

Students will receive no credit after taking Letters and Science 18.

*Prerequisites:* Primarily for students not specializing in biology. Basic communication of inheritance; gene mapping; gene expression and genetic disease in animals and humans; social inheritance of genetics. Offered alternate years. (SP)

### **MCB 50: The Immune System and Disease. (3 units) □ □**

Students will receive no credit for 50 after taking 100 or 102.

*Prerequisites:* High school chemistry or Chemistry 1A and high school biology or Biology 1A. Course will discuss how the immune system resolves, prevents, or causes disease. A general overview of the immune system will be covered in the first five weeks followed by five weeks discussing infectious diseases including anthrax, mad cow, herpes, malaria, tuberculosis, and HIV. In addition, other lectures will focus on current immunology topics including vaccines, autoimmunity, allergy, transplantation, and cancer. (F,SP)

*Beatty*

### **MCB 55: Plagues and Pandemics (3 units)**

Discussion of how infectious agents cause disease and impact society at large. We will examine historical and current examples of plagues and pandemics and consider the question of what we should do to ameliorate the impact of infectious disease in the future. The course is intended for non-majors and will begin by briefly providing necessary background in microbiology and immunology. The primary focus in each subsequent week, however, will be on discussing a particular infectious disease. The course will be broad in scope covering biological, historical, ethical and social implications of each disease. (F) *Beatty, Vance*

### **MCB 61: Brain, Mind, and Behavior (3 units)**

Introduction to human brain mechanisms of sensation, movement, perception, thinking, learning, memory, and emotion in terms of anatomy, physiology, and chemistry of the nervous system in health and disease. Intended for students in the humanities and social sciences and others not majoring in the biological sciences. (SP) *Presti*

### **MCB C62: Drugs and the Brain . (3 units) □ □**

The history, chemical nature, botanical origins, and effects on the human brain and behavior of drugs such as stimulants, depressants, psychedelics, analgesics, antidepressants, antipsychotics, steroids, and other psychoactive substances of both natural and synthetic origin. The necessary biological, chemical, and psychological background material for understanding the content of this course will be contained within the course itself. Also listed as Letters and

Science C30T. (F) *Presti*

**MCB 64: Exploring the Brain: Introduction to Neuroscience. (3 units)** □ □

Students will receive no credit for 64 after taking 61 or 160.

*Prerequisites: High school chemistry or Chemistry 1A; high school biology or Biology 1A.* This course will introduce lower division undergraduates to the fundamentals of neuroscience. The first part of the course covers basic membrane properties, synapses, action potentials, chemical and electrical synaptic interactions, receptor potentials, and receptor proteins. The second part of the course covers networks in invertebrates, memory and learning behavior, modulation, vertebrate brain and spinal cord, retina, visual cortex architecture, hierarchy, development, and higher cortical centers. (F)

*Werblin*