

MATH & SCIENCE COURSES

BIOM301 Biometrics (3 credits)

Descriptive statistics, introduction to probability, sampling, confidence interval estimation, hypothesis testing, simple regression and correlation. Emphasis on simple applications of statistical techniques and interpretation of statistical results.

BSCI330 Cell Biology and Physiology (4 credits)

Biochemical and physiological mechanisms underlying cellular function. Properties of cells which make life possible and mechanisms by which cells provide energy, reproduce, and regulate and integrate with each other and their environment.

BSCI353 Principles of Neuroscience (3 credits)

Principles of nervous system function, ranging from molecular and cellular basis of neuron function through nervous system integration.

BSCI339I Cellular Mechanisms of Aging and Disease(3 credits)

The immune system in health and disease. Presentation and analysis of the cellular and molecular processes that comprise the immune system.

BSCI440 Mammalian Physiology (4 credits)

A study of the cardiovascular, hematopoietic, gastrointestinal, renal and respiratory systems. Chemical and endocrine regulation of physiological functions in mammals.

BSCI437 General Virology (3 credits)

Discussion of the physical and chemical nature of viruses, virus cultivation and assay methods, virus replication, viral diseases with emphasis on the oncogenic viruses, viral genetics, and characteristics of the major virus groups.

BSCI454 Neurobiology Laboratory (1 credit)

Basic neuroanatomical techniques, intracellular and extracellular recordings of electrical potentials from nerve and muscle.

BCHM463 Biochemistry of Physiology; (3 credits)

An introduction to general biochemistry. A study of protein structure, enzyme catalysis, metabolism, and metabolic regulation with respect to their relationship to physiology.

PHYS331 Fundamentals of Physics I (4 credits)

The first part of a two-semester course in general physics treating the fields of mechanics, heat, sound, electricity, magnetism, optics, and modern physics.

PHYS332 Fundamentals of Physics II (4 credits)

A continuation of PHYS331.

NON-SCIENCE COURSES

In addition to their science coursework, students pursuing a B.S. in Biological Sciences are required to complete a *General Studies* requirement by satisfying the following:

- A minimum of 6 credit hours of Advanced Studies
- At least one Diversity course (3 credit hours)
- Professional Writing (3 credits)

Students may need to take additional courses to earn enough credits for graduation (120 credits) and may do so by taking courses from other UMCP programs at the Universities at Shady Grove.

Typical General Studies Electives (subject to change):

CCJS310 Criminal Investigations

An introduction to modern methods used in detection, investigation, and solution of crime. Students will be taught basic and advanced investigative techniques utilized by law enforcement agencies. Analysis of actual cases will be used to demonstrate practical uses of these techniques.

CCJS325 Slavery in the Twenty First Century: Combating Human Trafficking (3 credits)

The trafficking of human beings in its historical, legal, economic, political and social contexts. Scope of the global problem, different forms of human trafficking, and regional trends and practices. Roles of government, the international community and individual actors. Strategies to combat trafficking.

FMSC341 Personal and Family Finance (3 credits)

Individual and family financial strategies with emphasis on financial planning, savings, investments, insurance, income taxes, housing, and use of credit. Planning, analyzing, and controlling financial resources to resolve personal/family financial problems and to attain financial security.

MIEH321 SYPHILIS TO SARS (3 credits)

Examines the influences of environmental factors, economic development, migration, and land use changes on emergence and reemergence of infectious diseases. Population growth, development, and climate change are impacting natural reservoirs of infectious diseases and how they transmit through human populations. The course will look at both historical accounts and newly emerging and reemerging diseases including influenza as examples of our role in altering the diseases that threaten us. We will also critically evaluate how the issues are portrayed in news and entertainment media and controversy about the ethics of research on deadly viruses.

PSYC424 Communication and Persuasion (3 credits)

Effect of social communication upon behavior and attitudes. Theory and research concerning attitude change and social influence.

TLPL420

For prospective science teachers. Investigations of the nature of knowledge, reasoning, and learning in middle and secondary science. Readings from cognitive science and science education research; studies of student thinking in interview and classroom observations; analyses of curricula. Includes laboratory and field experiences.