Biology (BIO)

BIO 1500   Environmental Science  ..................... 4 Credit Hours
English/ESL Placement: Placement into ENG 1510.
A laboratory science course which will focus through an interdisciplinary investigation on (a) developing an awareness of one’s total environment (social, physical, and biological), (b) identifying the cause and perspective of our environmental concerns and, (c) exploring the possible and preferred solutions and strategies to those environmental issues.
BILLABLE CONTACT HOURS: 5
GE Outcomes: Global Understanding and Responsibility

BIO 1511   Life Science  .................................... 4 Credit Hours
Equivalent: BIO 1511, GSC 1510

BIO 1530   Molecular and Cellular Biology  ........... 4 Credit Hours
Equivalent: BIO 1510

BIO 1550   Organismal Biology - Biodiversity, Ecology and Evolution  ..................... 4 Credit Hours
Equivalent: BIO 1510

BIO 1570   Microbiology of Health and Disease  ........ 3 Credit Hours
Equivalent: BIO 1710

English/ESL Placement: Placement into ENG 1510 or higher.
Prerequisite: Satisfactory score on the OCC Biology Proficiency Test; or a grade of ‘C’ or better in BIO 1511 or BIO 1530 (or equivalent college transfer course) within the last 5 years.
Student will study the general nature and behavior of microbes as applied to human health and disease, including the dynamics of normal microbiota, the infectious process, microbes as causative agents of disease, host parasite relationships and development of immunity. Particular emphasis will be placed on the study of various modes of transmission and proper management to prevent spreading of infectious disease. This natural science course is also required for many health-related fields. This is a non-lab course. BILLABLE CONTACT HOURS: 3
GE Outcomes: Scientific Literacy

BIO 1600   Human Structure and Function  ............. 3 Credit Hours
Equivalent: BIO 1510

This course is designed to give the student a basic understanding of the human body. Visual demonstrations and a variety of organ and system models will be used during lectures to illustrate the structural and functional organization of the human body. This natural science course is also required for many health profession and technology programs. This is a non-lab course. BILLABLE CONTACT HOURS: 3
GE Outcomes: Scientific Literacy

BIO 1650   Human Anatomy and Physiology for the Emergency Medical Services Program  ..................... 5 Credit Hours
Equivalent: BIO 1510

Prerequisite: Completion of EMS 1010 EMS 1020 and EMS 1100 each with a grade of ‘C’ or better.
This course is designed to meet the needs of students in the Emergency Medical Services program. This course reinforces the fundamentals of human anatomy and physiology for all major body systems with a detailed laboratory experience. The goal of this course is to provide a detailed survey of human anatomy and physiology to students in the Emergency Medical Services program. Students will learn basic terminology associated with human anatomical structures and physiological processes. Students will apply terminology and physiological function through the use of models, plaques, microscopy, dissection and experimentation in lab. This course does not meet the requirements for most other health professional programs. BILLABLE CONTACT HOURS: 7

BIO 2540   General Zoology  ................................. 4 Credit Hours
Equivalent: BIO 1510

Prerequisite: BIO 1510 with a grade of ‘C’ or better within the last 5 years.
The course will explore representative protozoa and members of the animal kingdom, emphasizing their metabolism, anatomical structure and function, reproduction and development, evolution, diversity and ecology. The laboratory component of this course, which may include animal dissection, involves the application of the terminology and concepts presented in lecture. BILLABLE CONTACT HOURS: 6
GE Outcomes: Scientific Literacy

BIO 2560   Principles of Genetics  ...................... 3 Credit Hours
Equivalent: BIO 1510

Prerequisite: BIO 1530 and any of the following: BIO 1560 BIO 2540 or BIO 2710 all with a grade of ‘C’ or better within the last 5 years or consent of instructor.
The course examines the Mendelian and non-Mendelian laws of inheritance, the chromosome theory, chromosomal and genetic mutations, mechanisms of gene action, the nature of genetic material, statistical analysis, and eugenics. This is a non-laboratory course. BILLABLE CONTACT HOURS: 3
BIO 2601  Special Topics in Biology  ..................1-4 Credit Hours
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 1500 BIO 1530 or BIO 1511.
This course will explore a special topic of current interest in biology. Such
topics may include subjects in anatomy, physiology, botany, zoology,
microbiology, environmental science or other areas of the life sciences. In
studying these topics, the student will be introduced to current concepts
and their applications. The course will include a lecture component
and may also include laboratory experience, field trips or travel when
appropriate. Refer to the specific section using OCC's online system for
current topics. BILLABLE CONTACT HOURS: 1 - 4

BIO 2602  Special Topics in Biology: Biodiversity in the
Tropics ..........................................................2 Credit Hours
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 1500 BIO 1530 or BIO 1511.
Biodiversity in the Tropics. BILLABLE CONTACT HOURS: 2

BIO 2603  Special Topics in Biology  ..................1-4 Credit Hours
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 1500 BIO 1530 or BIO 1511.
This course will explore a special topic of current interest in biology. Such
topics may include subjects in anatomy, physiology, botany, zoology,
microbiology, environmental science or other areas of the life sciences. In
studying these topics, the student will be introduced to current concepts
and their applications. The course will include a lecture component
and may also include laboratory experience, field trips or travel when
appropriate. Refer to the specific section using OCC's online system for
current topics. BILLABLE CONTACT HOURS: 1 - 4

BIO 2604  Special Topics in Biology  ..................1-4 Credit Hours
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 1500 BIO 1530 or BIO 1511.
This course will explore a special topic of current interest in biology. Such
topics may include subjects in anatomy, physiology, botany, zoology,
microbiology, environmental science or other areas of the life sciences. In
studying these topics, the student will be introduced to current concepts
and their applications. The course will include a lecture component
and may also include laboratory experience, field trips or travel when
appropriate. Refer to the specific section using OCC's online system for
current topics. BILLABLE CONTACT HOURS: 1 - 4

BIO 2630  Human Anatomy and Physiology I  .......4 Credit Hours
Equivalent: BIO 1630,BIO 1610
English/ESL Placement: Placement into ENG 1510.
Prerequisite: Satisfactory score on the OCC Biology Proficiency Test;
or a grade of 'C' or better in BIO 1511 or BIO 1530 (or equivalent college
transfer course) within the last 5 years.
This course will analyze the structural and functional relationships of the
human body at the biochemical, cellular, tissue, organ and system level.
Emphasis will be placed on the identification of the major anatomical
parts and physiological activities of the integumentary, skeletal (including
articulations), muscular, and nervous (including special senses) system.
The laboratory component of this course involves application of the
concepts presented in lecture. This natural science course is also required
for many health-related fields. BILLABLE CONTACT HOURS: 6

BIO 2640  Human Anatomy and Physiology II  .......4 Credit Hours
Equivalent: BIO 1640,BIO 1620
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 2630 with a grade of 'C' or better within the last 5 years;
or consent of department discipline designee.
Utilizing and building upon information covered in Human Anatomy
and Physiology I (BIO 2630), this course will identify the major anatomical
parts of the endocrine, cardiovascular, lymphatic, immune, respiratory,
digestive, urinary, and reproductive systems of the human body and relate
their structures to the physiological activities of these systems. This course
will also analyze the homeostatic effects of fluids, electrolytes, acids and
bases throughout the integrated human body. The laboratory component
of this course involves application of the concepts presented in lecture.
This natural science course is also required for most health profession and
technology programs such as: dental hygiene, respiratory therapy, surgical
technology and nursing. BILLABLE CONTACT HOURS: 6

BIO 2660  Pathophysiology  ..............................3 Credit Hours
Equivalent: BIO 2250
English/ESL Placement: Placement into ENG 1510.
Prerequisite: BIO 1650 or BIO 2640 with a grade of 'C' or better within the
last 5 years or consent of discipline or department designee.
This course teaches the fundamentals of pathophysiology as it relates
to care of the chronic and emergent patient in home, pre-hospital, and
hospital settings. Content includes an overview of normal body functions,
the immune system and immune response, discussion of specific
diseases, cellular injury and death, shock, and how disease and injury
after normal function. This course is intended to meet the requirements of
the EMS National standard Curriculum on pathophysiology and is part of
the Advanced EMT program. BILLABLE CONTACT HOURS: 3

BIO 2710  Microbiology  .................................4 Credit Hours
Equivalent: CHE 1000 or BIO 1511
English/ESL Placement: Placement into ENG 1510.
Prerequisite: Both BIO 1530 and CHE 1000 or higher (or equivalent
college transfer course) with a grade of 'C' or better within the last 5 years;
or consent of department discipline designee.
The course concepts include microbial cell biology, microbial genetics,
interactions and impact of microorganisms and humans, interactions and
impact of microorganisms in the environment, and microbial diversity.
Laboratory incorporates basic techniques and exercises to investigate
course concepts. This natural science course is also required for many
health profession and technology programs such as: respiratory therapy,
surgical technology and nursing. BILLABLE CONTACT HOURS: 6