Central Ohio Technical College
Course Description Listing – General Education Courses – Natural Sciences – Biological Sciences Courses
2009-2010 Academic Year

ALL STUDENTS MUST TAKE PLACEMENT TESTS PRIOR TO SCHEDULING THE FIRST COMMUNICATIONS OR MATHEMATICS COURSE.

BIO-1705 Introduction to Human Biology

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None; Completion of or concurrent enrollment in PCE-1400 or equivalent course or college level composition course is recommended. Course is graded A-E. Not open to students with credit for NAT-1705 or NAT-4008. This course will count neither for elective credit nor toward meeting minimum credit hour requirements for graduation.

This introductory course is designed for the student planning entry into a technology requiring an understanding of human structure, function, and familiarity with anatomical and physiological terminology.

BIO-1730 Environmental Science

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: None. Recommend completion of or concurrent enrollment in PCE-1400 or equivalent course or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1730 or NAT-4061.

This course is an introduction to environmental science with an emphasis on the complexity and interrelatedness of environmental issues, concerns, problems, and economics. The impact of humans on ecosystems, resources, energy and the environment are presented. Special reference is made to the significance of toxic materials. The roles of business, industry, and government as related to the environment will also be addressed. The laboratory portion of this course enhances the theories and concepts presented in the lecture.

BIO-1740 General Biology

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: A grade of C (2.00) or better in High School Biology or BIO-1705. Recommended the completion of this course for students who must take BIO-1772 Human Anatomy and Physiology I, and BIO-1773 Human Anatomy and Physiology II. Recommend completion of or concurrent enrollment in PCE-1400 or equivalent course or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1740 or NAT-4070.

General Biology introduces the major concepts and principles of biology, emphasizing inorganic, organic and biochemistry processes and concepts, cell structure and function, DNA function and technology, genetics, diversity of all living organisms, and ecology. The laboratory portion of this course enhances the theories and concepts presented in lecture.

BIO-1745 Human Biology

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: Grade of C (2.00) or better in high school biology or BIO-1705. This course may not be taken concurrently with BIO-1705. High school chemistry is recommended but not required. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1745 or NAT-4081.

Human Biology is a one-quarter introductory course that examines introductory chemistry, the cell, cellular reproduction and differentiation, tissues, a review of the anatomical and physiological aspects of the integumentary, skeletal, musculature, nervous, endocrine, cardiovascular, immune, respiratory, digestive, urinary, and reproductive systems. Also, students will review the principles of genetics and will discuss genetic disorders. Laboratory studies will involve the application of lecture materials and may involve the use of human cadavers, along with other learning resources including videos, computer applications, histological slides, animal specimens/dissections, and anatomical models.

BIO-1750 Elementary Microbiology

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Grade of C (2.00) or better in BIO-1740 or BIO-1745. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Not open to students with credit for NAT-1745, NAT-1755, NAT-4003 or NAT-4004. Course is graded A-E.

This course is an introduction to microbiology, surveying the basic types of microscopic organisms. Classification, structure, culturing, transmission, microbial control, and selected diseases are studied.

BIO-1755 Microbiology

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: Grade of C (2.00) or better in high school chemistry or CHM-1700 ***and*** grade of C (2.00) or better in BIO-1740 or BIO-1745 or BIO-1772. Recommend completion of or concurrent enrollment in PCE-1400 or equivalent course or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1755 or NAT-4003.

This course is a survey of the microbial world including types of microbes, microbial metabolism, microbial genetics, microbial growth, host/microbe interactions, immunology, and infectious diseases of the body systems. The laboratory portion of this course enhances the theories and concepts presented in the didactic portion of the course.

BIO-1760 Medical Terminology

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Student must have knowledge of computer applications and access to a computer as this course is offered only online. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Course is graded A-E. BIO-1760 has been approved by the Ohio Board of Regents as meeting the Transfer Assurance Guide (TAG) course OHL005 requirements. Not open to students with credit for NAT-1760 or NAT-4039.

This web-based on-line course is designed to introduce the student to the basic elements of medical terminology. The material presented will give the student the ability to combine root elements with prefixes, suffices, and combining vowels to decipher and understand medical terms.

BIO-1765 Nutrition

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: None. High school chemistry is recommended but not required. Recommend completion of or concurrent enrollment in PCE-1400 or equivalent course or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1765 or NAT-4036.

Students will learn about the fundamental principles and practices that are essential in nutritional care to maintain health, to prevent illness, and to provide support and therapy during illness. The focus will be on the composition and function of foods; the nutritional needs during the life cycle; and the ways in which variations in caloric content, consistency, and nutrient composition may be employed to meet individual diet requirements.

BIO-1772 Human Anatomy and Physiology I

6 credit hours, 7 contact hours (5 hours lecture and 2 hours lab). Prerequisite: Grade of C (2.00) or better in CHM-1710 or CHM-1713. Course is graded A-E.

This course is an introduction to the study of anatomy and physiology of the human body, including standard terminology, chemistry review, cells, tissues, and structure, function and physiology of the integumentary, skeletal, muscular, nervous, special senses and receptors. Laboratory studies will involve the application of lecture materials and may involve the use of human cadavers, along with other learning resources including videos, computer applications, histological slides, animal specimens/dissections, and anatomical models.

BIO-1773 Human Anatomy and Physiology II

6 credit hours, 7 contact hours (5 hours lecture and 2 hours lab). Prerequisite: Grade of C (2.00) or better in BIO-1772. Course is graded A-E.

The student will continue to study the anatomy and physiology of the human body, including the structures and functions of endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, urinary, and reproductive systems. The course also includes the study of genetics and embryology. Laboratory may include the study of human cadavers along with other learning resources including videos, computer applications, histological slides, animal specimens/dissections, and anatomical models.

BIO-1778 Pathophysiology I

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Grade of C (2.00) or better in BIO-1772. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1778 or NAT-4048. BIO-1778 plus BIO-1779 together have been approved by the Ohio Board of Regents as meeting the Transfer Assurance Guide (TAG) course requirements.

This course is the study of pathological imbalances including cellular adaptation and injury, fluid compartment exchanges with edema and dehydration, electrolyte functions, control and imbalances, acidosis and alkalosis, nervous system injuries and responses, sensory imbalances, skeletal system injury and repair, soft tissue injury and repair, and muscle injury and dysfunction.

BIO-1779 Pathophysiology II

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Grade of C (2.00) or better in BIO-1773 and BIO-1778. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Course is graded A-E. Not open to students with credit for NAT-1779 or NAT-4049. BIO-1778 plus BIO-1779 together have been approved by the Ohio Board of Regents as meeting the Transfer Assurance Guide (TAG) course requirements.

This course is the study of pathological imbalances including blood pressure, homeostasis, shock, cardiac malfunction, respiratory malfunction, hematopoiesis with anemias and leukemias, gastrointestinal imbalances, liver malfunction, renal failure, bladder injury and control, and endocrine hypersecretions and hyposecretions.

BIO-1780 Biology I

6 credit hours, 8 contact hours (4 hours lecture, 1 hour recitation, 3 hours lab). Prerequisite: Grade of C (2.00) or better in high school biology or BIO-1705 and grade of C (2.00) or better in high school Algebra II or MTH-1210 and grade of C (2.00) or better in high school chemistry or CHM-1700. Recommend completion of or concurrent enrollment in PCE-1400 or college level composition course. Course is graded A-E.

This course explores general biological problems and processes as they are experienced by all living organisms: the chemistry and energetic of life, molecular genetics, cellular reproduction, and evolution. The laboratory portion enhances the theories and concepts presented in lecture. This is the first of a two-quarter sequence - BIO-1780 Biology I and BIO-1781 Biology II.

BIO-1781 Biology II

6 credit hours, 8 contact hours (4 hours lecture, 1 hour recitation, 3 hours lab). Prerequisite: Grade of C (2.00) or better in BIO-1780. Course is graded A-E.

This course explores general biological problems and processes as they are experienced by all living organisms: plant and animal diversity, evolution, basic plant and animal systems, hormones, and immunology. The laboratory portion enhances the theories and concepts presented in lecture. This is the second of a two-quarter sequence - BIO-1780 Biology I and BIO-1781 Biology II.