North Central
Michigan College

NCMC MASTER COURSE SYLLABUS FOR YEARS: 2001-2003

DIVISION/AREA: Natural Sciences, Health and Human Services DEPARTMENT: Natural Science

AREA DEAN: Timothy Dykstra, Ph.D. ORIGINATOR: Syverson

DIVISION DIRECTOR: Polly Flippo, MSN, RN

HOURS OF INSTRUCTION: 5 Lecture: 3 Lab: 2

COURSE NUMBER: BIO 235 CREDIT HOURS: 4

COURSE TITLE: General Anatomy & Physiology I

TRANSFERABLE YES: X NO: TO: Most

PREREQUISITE(S)/COREQUISITE(S)/ADVISORY:

Prerequisite: None, but high school or college level biology is highly recommended.

CATALOG DESCRIPTION:

An introduction to the principles of biology covering the structure and function of the skeletal, muscular, nervous, and sensory systems. No prerequisite, but high school or college level biology is highly recommended. NOTE: BIO 235 and BIO 236 together are designed to provide a complete overview of human biology. For this reason Anatomy and Physiology should be considered as a two semester course that will be taken in sequence.

GENERAL EDUCATION OUTCOMES OR OCCUPATIONAL PROGRAM OUTCOMES:
Refer to college catalog (p.70) or specific occupational program outcomes and describe how this course meets those outcomes.

Gen Ed Outcome # 8. Examined knowledge from the humanities, social sciences, natural sciences and technology. For description, see next.

COURSE TITLE AND NUMBER: BIO 235 General Anatomy and Physiology

COURSE OBJECTIVES & OUTCOMES:
This course is designed to have four major student outcomes. At the completion of this course, the student should be able to:

1. Demonstrate the ability to relate various human anatomical structures with their characteristics.
2. Demonstrate the ability to relate various human anatomical structures with their functions.
3. Demonstrate the ability to show the relationships between the various structures of the body.
4. Demonstrate the ability to show the relationships between the various functions of the body.

METHODS OF INSTRUCTION:
1. Lecture with students encouraged to ask questions and comment at any time**.**
2. Laboratory independant study and small group work with instructor guidance as requested.

COURSE DELIVERY METHOD: In classroom or hybrid

METHODS OF EVALUATION:

3 LECTURE TESTS
Each of the 3 major tests will consist of approximately 100 points. The format of the tests will consist of multiple choice and short answer questions that may require some diagraming.
Special test times must be arranged for BEFORE the regular test time. A penalty of 10% will be assessed for taking a test late.
LECTURE TEST #3 WILL INCLUDE REVIEW QUESTIONS.

2 LAB PRACTICALS
Each of the 2 lab practicals will consist of 100 pts. They will be held during regular lab times and will require the identification of the structures or functions of anatomical or microscopic material. Due to the complexity of setting up lab practicals, NO MAKEUPS WILL BE ALLOWED.

10 WEEKLY QUIZZES
Each of the weekly quizzes will consist of 10 points. the format will usually consist of fill-in-the-blank and short answer questions. NO MAKEUPS WILL BE GIVEN. Usually 13 quizzes will be offered during the semester, the 10 best scores being used for grading purposes.

REQUIRED TEXTS: (Representative List)
CONCEPTS OF HUMAN ANATOMY AND PHYSIOLOGY, 5th ED., Van De Graff and Fox, 1999, Wm. C. Brown Publishers.

Optional supplementary Materials:
SCAN-TRON Forms 882 (You will need 3)

Reasonable accommodations may be provided for students with documented physical, sensory, cognitive, systemic and psychiatric disabilities. Please contact the Educational Opportunity Program (231) 348-668) to arrange services for this course.

COURSE TITLE AND NUMBER: BIO 235 General Anatomy and Physiology

APPROXIMATE TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION (Course Outline):

Lecture Number:

1. Introduction to the course
2. Basic chemical principles.
3. Structures of different organic molecules, their characteristics and functions.
4. Component structures and basic functions of an animal cell.
5. Genetic regulation and asexual and sexual cell reproduction.
6. Basic enzyme function and general process of protein synthesis.
7. Cellular respiration.
8. Cell membrane transport and cell membrane potential.
9. Major tissues of the body and their basic functions.
10. Integument structure, functions and major clinical factors.
11. Lecture Test 1
12. Cartilage and bone structure.
13. Process of ossification and macroscopic and microscopic bone structure.
14. Common skeletal clinical factors and healing processes.
15. Basic articulation types and terminology associated with body movements.
16. Structure and function of the body's major articulations.and articulation clinical factors.
17. Muscle organ structure.
18. Skeletal muscle fiber and organ physiology.
19. Cardiac and smooth muscle structure and function.
20. Different nervous tissue types.
21. Lecture Test 2
22. Structures and functions of neuron types.
23. Process of impulse conduction.
24. Process of synapse activity.
25. Anatomy of the brain, and regional functions.
26. Anatomy of the spinal cord, and regional functions.
27. Cranial and spinal nerves, major plexi and branches, their locations and functions.
28. Basic features of the Autonomic Nervous System.
29. Sympathetic and parasmpathetic anatomy.
30. Function the somatic, sympathetic an parasympathetic nervous systems, and the important operational mechanisms associated with each.
31. Autonomic functions.
32. Lecture Test 3

Lab Numbers

1. through 13. Identify and describe all the bones of the human body and their respective major landmarks.
14. Lab Practical 1

15 through 29. Identify the majority of the human muscles and muscle groups and their functions.

30. Lab Practical 2

APPROVED FOR ADOPTION BY THE CRD/AP COMMITTEE ON _____