

COURSE TITLE AND NUMBER: General Anatomy & Physiology II BIO 236

North Central **Michigan College**

NCMC MASTER COURSE SYLLABUS FOR YEARS: Winter 2001-2003DIVISION/AREA: Natural ScienceDEPARTMENT:

DIVISION DIRECTOR: Polly Flippo, MSN, RN

AREA DEAN: Timothy Dykstra, Ph.D.ORIGINATOR: Lars SyversonHOURS OF INSTRUCTION:

Lecture: 3

Lab: 2

COURSE NUMBER: BIO 236CREDIT HOURS: 4COURSE TITLE: General Anatomy and Physiology IITRANSFERABLE YES: X NO: TO: Most

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

BIO 235

CATALOG DESCRIPTION:

BIO 236 is the continuation of BIO 235. This second semester covers the structure and function of the Endocrine, Cardiovascular, Lymphatic, Immune, Respiratory, Digestive, Urinary and Reproductive systems.

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 OBJECTIVES & OUTCOMES:

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

COURSE TITLE AND NUMBER: General Anatomy & Physiology II BIO 236

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 independent study and small group work with instructor guidance as requested.

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 diagramming. Special test times must be arranged for BEFORE the regular test time. A penalty of 10% will be assessed for taking a test late.

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.

REQUIRED TEXTS: (Representative List)

CONCEPTS OF HUMAN ANATOMY AND PHYSIOLOGY, 5th ED., Van De Graff and Fox, 1999, Wm. C. Brown Publishers.

A GUIDE TO ANATOMY & PHYSIOLOGY LAB, 2nd ED., Rust, 1986, Southwest Educational Enterprises, San Antonio

Optional supplementary Materials:

SCAN-TRON Forms 882 (You will need 3)

DISPOSABLE PLASTIC GLOVES

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

Lecture Number:

1. Characteristics of Autonomic Nerves, Sympathetic Anatomy, Parasympathetic Anatomy

COURSE TITLE AND NUMBER: General Anatomy & Physiology II BIO 236

2. Fight or Flight Response, Autonomic Functions

3. Eye Structure and Function

4. Ear Structure and Function

5. Hormone Chemistry, Mechanisms of Hormone action

6. Pituitary Gland, Adrenal Glands

7. Thyroid and Parathyroids, Pancreas, Clinical Considerations

8. Composition of the Blood

9. Blood Clotting

10. Test #1

11. Components of the Circulatory System, Development of the Heart, Structure of the Heart

12. Cardiac Cycle, Heart Sounds, and ECG, Blood Vessels, Clinical Considerations

13. Cardiac Output, Blood Volume

14. Vascular Resistance and Blood Flow, Blood Pressure Dynamics, Clinical Considerations

15. Lymph and Lymphatic Vessels, Lymph Nodes and Lymphatic Organs, Innate Immunity

16. Antigens, Immunoglobulins, Lymphocyte Genetics

17. Humoral Immunity

18. Cell-Mediated Immunity

19. Autoimmunity and Hypersensitivity

20. Test #2

21. Anatomy of the URT, Anatomy of the LRT

21. Physical Aspects of Ventilation, Mechanics of Breathing, Gas Exchange in the Lungs

22. Hemoglobin and Oxygen Transport, CO₂ Transport and Regulation of Breathing

23. Kidney Structure, Nephron Structure, Glomerular Filtration

24. Reabsorption of salt and water, Renal Plasma Clearance, Renal Control of Electrolyte Balance

25. Renal Control of Acid-Base Balance, Ureters, Urinary Bladder and Urethra, Clinical Considerations

26. Layers of the GI Tract, Mouth, Pharynx, Esophagus and Stomach, Small Intestine, Large Intestine

27. Liver, Gallbladder and Pancreas, Digestion and Absorption of Food Molecules

28. Development of the Reproductive Systems, Structure and Function of Testes

29. Spermatic Ducts, Accessory Glands, and Penis, Mechanisms of Erection and Ejaculation

30. Structure and Function of the Ovaries, Oviducts, Uterus, and Supporting Structures, Cycles

31. Fertilization, Pre-embryonic Period, Embryonic Period, Reproductive Engineering

32. Test #3

Reasonable accommodations may be provided for students with documented physical, sensory, cognitive, systemic and psychiatric disabilities. Please contact the Educational Opportunity Program (EOP) at (231) 348-6687 to arrange services for this course.

APPROVED FOR ADOPTION BY THE CRD/AP COMMITTEE ON _____