23 May 2002

OUTCOMES BASED LEARNING MATRIX

Course: Survey of Human Form and Function **Department: Biology**

Course Description:
This course is an introduction to the structure and function of the human body. Topics covered include the cell, tissues, levels of organization, and a survey of the major organ systems of the body. The course is designed to be a combination lecture/laboratory experience emphasizing a 'hands-on' approach to learning. A dissection component of the laboratory work is required for successful completion of the course. Recommended for Dental Assisting and Visual Arts students Lecture: 2 hours Laboratory: 2 hours
Prerequisites:
Preparing for College Reading II (ENGL092), Introductory Writing (ENGL099), and Fundamentals of Mathematics (MATH010), or waiver by placement testing results, or Departmental Approval

The individual outcomes listed in the first column answer the question: **What must the learner know and be able to do at the end of the course?** Items in the third column should answer the question: **How do we know?** The second column is where teachers can be most creative; it's for pedagogy. Each rectangle in column one contains just one outcome; the corresponding rectangles in columns two and three, however, may contain more than one item.

The code indicates the core competencies being strengthened by the outcomes activities and the assessment tools.
Critical Thinking (CT); technology skills (TS); oral communications (OC); quantitative skills (QS); reading (R); writing (W).

*COURSE OUTCOMES	OUTCOMES ACTIVITIES	ASSESSMENT TOOLS

Human Body/Orientation To explore the meaning of the terms anatomy and physiology to be able to discuss how they are studied by scientists using the language of anatomy.	Attend lecture/discussion (W,OC,CT,R) Read text (CT,R) Do workbook and study guide (CT,W,R) Start semester drawing portfolio project (CT,W,R) Do lab using torso to locate major organs and body cavities (CT,TS,OC,R) Examine models of the heart, brain, kidney and eye for body sections (CT,TS,OC,R,W)	Test (CT,R,W) Quiz (CT,R,W) Lab report (CT,R,W) Portfolio (CT,R,W,TS)
Chemical Background Describe the levels of structural organization from atoms to organisms to understand how the chemical level of organization is related to human form and function. Demonstrate the properties of acids and bases to understand the concepts and importance of pH and homeostasis.	Attend lecture/discussion (W,OC,R,CT) Read text (CT,R) Do workbook and study guide (R,W,CT) Do chemistry lab with indicators to determine pH range and calculate molarity by titration (TS,QS,CT,R,W,OC)	Quiz (CT,R,W) Lab Report (CT,R,W)

Cells/Tissues Describe a generalized animal cell and its structural organization in order to understand the functions of the organelles. Discuss the diversity of human cells to understand the relationship between structure and function. Identify the four major tissues: epithelial, connective, nerve and muscle in order to understand how the tissues differ structurally and functionally.	Attend lecture/discussion (W,OC,R,CT) Read text (R,CT) Do workbook and study guide (CT,W,R) Drawing portfolio/draw and label examples of cells and tissues viewed with microscope slides and /or drawings in text or workbook (W,CT,R,TS) Examine electron micrographs and discuss preparation of tissues for light and electron microscopy (CT,OC,R) Examine model of generalized cell to identify the organelles and their functions (R,W,CT)	Quiz,Test (CT,W,R) Lab Practical (CT,W,R,TS) Drawing Portfolio (CT,R,W,TS) Lab Reports (CT,R,W)
Integumentary System Describe the integumentary system in order to have a working knowledge of the functions and clinical applications of the skin and the body membranes.	Attend lectures/discussion (W,OC,CT,R) Read text (CT,R) Do workbook and study guide (CT,W,R) Drawing portfolio/draw and label slide of human scalp (R,W,CT,TS) Examine a model of skin (R,W,CT) Report Tissue Engineering/Speaker from Organogenesis discussing a bilayered human skin (R,W,CT) Report/Skincheck.com. " Cancer Warning" (R,W,TS,CT)	Test (CT,R,W) Quiz CT,R,W) Drawing portfolio (CT,R,W,TS) Lab Report (CT,R,W) Tissue culture report (CT,R,W) Skin check report (CT,R,W)
Skeletal System Describe the skeletal system in order to understand the homeostatic and clinical relationships of this system to other body systems.	Read text (CT,R) Attend lectures/discussion (W,OC,CT,R) Drawing portfolio/ axial and appendicular bones / slides of spongy and hard bone (R,W,TS,CT) Examine a human skeleton to identify bones and study classes of joints / examine disarticulated skull, vertebrae, ear and long bones (R,W,CT) Examine model of compact bone to identify osteon (CT,R,W)	Test (CT,R,W) Quiz (CT,R,W) Lab report (CT,R,W) Lab practical (CT,R,W,TS)

Muscular System Compare and contrast the structural and functional characteristics of cardiac, skeletal and smooth muscle in order to understand the homeostatic and clinical relationship of this system to other systems, especially the nervous system.	Read text (CT,R) Attend lectures/discussion (W,OC,CT,R) Do workbook and study guide (CT,W,R) Drawing portfolio/slides of muscle tissue (R,W,TS,CT) See video for overview/Muscles and Exercise (CT) Lab/ Use torso to identify superficial human muscles (R,W,CT) Short report on anabolic steroids (CT,R,W)	Test (CT,R,W) Quiz (CT,R,W) Lab report (CT,R,W) Drawing portfolio (TS,R,W,CT) Report (R,W,CT)
Nervous System Describe the basic organization of the CNS and the PNS in order to appreciate the role of this system as the master controlling and communicating system.	Attend lecture/discussion (W,OC,CT,R) Read text (CT,R) Do workbook and study guide (CT,W,R) Drawing portfolio/motor neuron/brain (R,W,CT) Lab Dissection of sheep brain and cow eye (CT,R,W,TS) Perform visual acuity tests (CT,R,W) Examine models of human brain (CT,,R,W) Use website intelihealth.com to find current studies on neuroscience research (CT,R,W)	Test (R,W,CT) Quiz (R,W,CT) Lab reports (W,R,CT) Drawing portfolio (TS,R,W,CT) Neuroscience research report(CT,R,W)

Cardiovascular/Lymphatic To study the composition, functions and development of blood in order to understand its important diagnostic nature and interaction with the immune system. To have a working knowledge of the cardiovascular and lymphatic systems to be able to understand important clinical applications and recent technology.	Attend lecture/discussion (W,R,OC,CT) Read text (CT,R)a Do workbook and study guide (CT,W,R) Drawing portfolio (R,W,CT) Examine human blood slides and lymphatic and blood vessels (CT,R,W) Do lab on blood groups/ABO and Rh (CT,R,W) Dissect a sheep heart (CT,W,R,TS) Identify structures on human heart model (CT,R,W) Demonstrate how to measure blood pressure and calculate the pulse pressure (CT,TS,QS,R,W) Research and write a short report on a blood disorder (W,R,CT)	Test (CT,W,R) Quiz (CT,R,W) Lab reports (R,W,CT) Drawing portfolio (R,W,TS,CT) Lab practical (CT,R,W,TS) Report on blood disorder (CT,R,W)
Laboratory Skills To work safely in the lab and follow lab protocols in order to work cooperatively to complete lab exercises and conduct experiments To be able to use the microscope to observe cell structure and function in order to develop good technique.	Read and sign the safety sheet (CT,R) Follow directions carefully (CT,R) Follow directions for clean up of materials (CT,R) Use microscope in several labs (CT,R,W,TS) follow directions for: proper focusing techniques, care of the microscope and correct storage of the microscopes Use simple math when appropriate (CT,QS,R,W,TS)	Supervise students in the lab Lab practicals CT,R,W,TS) Quizzes (CT,R,W)
Study Skills To apply a study skills method to learning the subject matter in order to improve success in an academically rigorous course.	Teach students ten study tips that will help them succeed (CT,W,R) Recommend ARC as a resource (CT) Encourage the use of interactive study supplements when available (CD ROM and web sites) (CT,R,W) Recommend study groups (CT,OC,R,W)	Quizzes(CT,R,W) Tests (R,W,CT) Workshops (OC,R,W,CT) Study groups (OC,R,W,CT)

To strengthen Core Competencies** in order to increase success in this and other courses and in the workplace.	Referenced above.	Referenced above.

*Try to express an outcome as an infinitive phrase that concludes this sentence: **At the end of the course, the students should be able to . . ..** Finding the line between too general and too specific can be difficult. In an English Composition course, for instance, it is probably too general to say, "The student should be able to write effective essays." It is probably too specific to say, "The student should be able to write an introductory paragraph of at least 50 words, containing an attention-getting device, an announcement of the narrowed topic, and an explicit thesis sentence." Just right might read, "The student will write introductions that gather attention and focus the essay."

**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); technology skills (TS); oral communications (OC); quantitative skills (QS); reading (R); writing (w).