



Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title – Human Anatomy and Physiology I

Course Prefix and Number – BIOL 2401

Department - Biology

Division – Math & Science

Course Type: (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours # : Lecture Hours # : Lab/Other Hours # 4:3:2

Equated Pay Hours for Course – 4.2

Course Catalog Description – Study of the structure and function of human anatomy, including the nervous, endocrine, integumentary, muscular, and skeletal systems; as well as basic chemistry, the cell, and tissues.

List Lab/ Other Hours
Lab Hours 2
Clinical Hours
Practicum Hours
Other (list)

Prerequisites/Co-requisites - TSI reading and writing requirements met

Prepared by Wendy Waters

Date 8-1-13

Reviewed by Department Head Kim Raun

Date 8-1-13

Accuracy Verified by Division Chair Kevin Dees

Date 8-1-13

Approved by Dean or Vice President of Instruction *gghunt*

Date 8-1-13



I. Topical Outline – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non lecture instruction):

Lecture

- I. Introduction: The body as a whole
 - A. Levels of structural organization
 - B. Homeostasis and homeostatic mechanisms
 1. Negative feedback
 2. Positive feedback
 - C. Description of the human body
 1. Body regions
 2. Body cavities
 3. Serous membranes
- II. Chemical level of organization
 - A. Chemical bonds
 - B. Concept of pH and buffers
 - C. Organic molecules
 1. Carbohydrates
 2. Lipids
 3. Proteins
 4. Nucleic Acids
 - a. Components
 - b. Protein synthesis
- III. Cellular level of organization
 - A. The cell and its composition
 1. Plasma membrane
 - a. Composition
 - b. Membrane permeability
 - c. Gradients
 2. Cytoplasm
 - a. Cytosol
 - b. Organelles and their functions
 3. Nucleus
 - B. Functional systems of the cell
 1. Passive processes
 - a. Diffusion and facilitated diffusion
 - b. Osmosis
 2. Active processes
 - a. Active transport
 - b. Vesicular transport
 - (i) Endocytosis
 - (ii) Exocytosis
 - (iii) Transcytosis
- IV. Tissue level of organization (histology and function)
 - A. Epithelial
 1. Covering and lining
 2. Glandular
 - a. Endocrine
 - b. Exocrine
 - B. Connective
 1. Loose and Dense Connective Tissue
 2. Bone

- 3. Cartilage
 - 4. Blood and lymph
 - C. Muscle
 - D. Nervous
 - E. Epithelial and synovial membranes
 - F. Tissue repair
- V. The integumentary system
 - A. Epidermis
 - B. Dermis
 - C. Hypodermis
 - D. Skin color
 - E. Hair and nails
 - F. Skin damage
- VI. The skeletal system
 - A. Anatomy of bone
 - B. Types of bones
 - 1. Formation
 - 2. Growth
 - C. Types of joints
 - D. Movements
 - E. Homeostatic imbalances
- VII. The muscular system
 - A. Types of muscle
 - 1. Anatomy
 - 2. Location
 - 3. Muscle physiology
- VIII. The nervous system
 - A. Neuron and supporting cells
 - B. Nerve physiology
 - 1. Action potentials
 - 2. Conduction
 - C. Structures and function
 - D. Organization
 - 1. Central nervous system
 - a. Major parts and their functions
 - b. Meninges
 - c. Blood-brain barrier
 - d. Cerebrospinal fluid and its circulation
 - 2. Peripheral nervous system
 - a. Cranial nerves and their functions
 - b. Distribution of spinal nerves
 - c. Reflex and reflex arcs
 - d. Autonomic nervous system
 - E. Sensory and motor neural pathways
 - F. The special senses
- IX. The endocrine system
 - A. Hormone transport
 - B. Mechanism of hormone action
 - C. Endocrine glands
 - 1. Locations
 - 2. Structure
 - 3. Control of hormone secretion
 - 4. Function
 - 5. Homeostatic imbalances

Laboratory

- I. Orientation
 - A. Parts of a microscope
 - B. Calculation of total magnification
 - C. Anatomical terminology
 - D. Body directions and planes
 - E. Body cavities
- II. Cells, tissues, and skin
 - A. Identification of 4 types of tissues (models and slides)
 - B. Identification of components of skin (model and slides)
- III. Skeletal system
 - A. Bone histology and names
 - B. Bone markings
- IV. Muscular system
 - A. Muscle histology
 - B. Names of major skeletal muscles
 - C. Origin, insertion, and action of major skeletal muscles
- V. Nervous system, brain and spinal cord
 - A. Identification of structures of a neuron
 - B. Identification of structures of brain
 - C. Identification of structures of the spinal cord
 - D. Identification of cranial and peripheral nerves
 - E. Identification of structures of the eye and ear
- VI. Endocrine system
 - A. Identification of endocrine glands
 - B. Hormones produced by endocrine glands

II. Course Learning Outcomes

Course Learning Outcomes Upon completion of course, students will:	Methods of Assessment
1. Describe the basic organization of the human body and recognize the complexity of structures and functions involved in homeostasis.	1. lecture exam questions and post-test exam questions Case study, peer review, discussion or homework activity (in class or online), graph/table/chart, short essay, presentation
2. Identify important anatomical structures of the integumentary, skeletal, muscular, nervous, and endocrine systems.	2. laboratory practicals; Peer review, group activity, project
3. Compare the integumentary, skeletal, muscular, nervous, and endocrine systems with respect to: 1) overall function, 2) function of important anatomical structures of each system, 3) homeostatic mechanisms, and 4) interaction between systems.	3. lecture exam questions and post-test exam questions; Exam/quiz, case study, graph/table/chart, presentation, short essay

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

Text: Marieb and Hoehn. *Human Anatomy & Physiology*. Pearson. Current edition

Laboratory Manual: Marieb and Mitchell. *Human Anatomy & Physiology: Custom Edition for WCJC*. Pearson. Current edition

IV. Suggested Course Maximum – 36 lecture; 24 lab

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.

Laboratory classroom required

VII. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course

Lecture Average:	<u>55%</u>	Grade Assignments (%):
Exam average (3-4 exams)	30-55%	A 100-90
Other (homework, quizzes, projects, etc.)	0-25%	B 89-80
Laboratory Average (average of 3 lab practicals)	<u>25%</u>	C 79-70
Final Exam (includes at least 50% comprehensive material)	<u>20%</u>	D 69-60
Total	100%	F Below 60

VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)
No additional documentation needed

- **Academic WCJC Core Course**
Attach the Core Curriculum Review Forms

- Critical Thinking
- Communication
- Empirical & Quantitative Skills
- Teamwork
- Social Responsibility
- Personal Responsibility

- **WECM Courses**

Attach the following:

- Program SCANS Matrix
- Course SCANS Competencies Checklist



**Wharton County
Junior College**

Core Curriculum Review Form

Foundational Component Area: **Life & Physical Sciences**

Course Prefix & Suffix: _____

Core Objective: **Critical Thinking Skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

Student Learning Outcome supporting core objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
The SLO is:	Insert SLO (from Administrative Master Syllabi) below	Provide a brief name and description of the sample learning activity:	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective:
<input type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated			
<input type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated			
<input type="checkbox"/> Existing <input type="checkbox"/> Revised <input type="checkbox"/> New <input type="checkbox"/> State Mandated			

Department Head: _____

Date: _____



Core Curriculum Review Form

Foundational Component Area: **Life & Physical Sciences**

Course Prefix & Suffix: _____

Core Objective: **Communication Skills**—to include effective development, interpretation and expression of ideas through written, oral and visual communication

Student Learning Outcome supporting core objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
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Department Head: _____

Date: _____



Core Curriculum Review Form

Foundational Component Area: **Life & Physical Sciences**

Course Prefix & Suffix: _____

Core Objective: **Empirical and Quantitative Skills**—to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Student Learning Outcome supporting core objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
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Department Head: _____

Date: _____



Core Curriculum Review Form

Foundational Component Area: **Life & Physical Sciences**

Course Prefix & Suffix: _____

Core Objective: **Teamwork**—to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Student Learning Outcome supporting core objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
The SLO is:	Insert SLO (from Administrative Master Syllabi) below	Provide a brief name and description of the sample learning activity:	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective:
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