



UCC Document # _____

College Document # COAS 120

Review Type: Edit Exp Full **CATALOG YEAR 2012-2013**

COLLEGE/SCHOOL/SECTION: Department of Biology and Chemistry
College of Arts and Sciences

Course: Add: **X** Delete:

(check all that apply) Change: Number **BIOL 3405** Title **Human Physiology SCH 4**
Description **Attached** Prerequisite **BIOL 3403**

Response Required: New course will be part of major minor as a required
or elective **X** course

Response Required: New course will introduce **X**, reinforce , or apply concepts

If new, provide Course Prefix, Number, Title, **Measurable** Student Learning Outcomes, SCH Value, Description, prerequisite, and lecture/lab hours if applicable. If in current online catalog, provide change and attach text with changes in red and provide a brief justification.

Attachment.

Program: Delete: Add: Change: Attach new/changed Program of Study description and 4-year plan. If in current online catalog, provide change and attach text with changes in red.

Minor: Add: Delete: Change: Attach new/changed minor. If in current online catalog, provide change and attach text with changes in red.

College Introductory Pages: Add information: Change information:
Attach new/changed information. If in current online catalog, provide change and attach text with changes in red.

Other: Add information: Change information: Attach new/changed information. If in current online catalog, provide change and attach text with changes in red.

Approvals:	Signature	Date
Chair Department Curriculum Committee	_____	_____
Chair Department	_____	_____
Chair College Curriculum Committee	_____	_____
Dean	_____	_____

BIOL 3405

Human Physiology

BIOL 3001

Human Physiology Lab

Course description:

BIOL 3405 Human Physiology. Four semester hours

A study of the function of the human body including cell function, tissue functions, homeostasis, metabolism, nervous system, endocrine system, muscle function, cardiovascular system, breathing and gas exchange, digestive system, urinary system, water and electrolyte balance, acid base balance. Prerequisite: Twelve hours of Biology, BIOL 3403, and junior standing. Lecture/Laboratory. Lab fee: \$30.00.

Measurable Student Learning Outcomes:

After completing the course the student will be able to:

- 1. Describe the relationship between the internal and external environment**
- 2. Define homeostasis**
- 3. Define metabolism**
- 4. Explain the importance of chemical bonds in human physiology**
- 5. Explain the importance of water in human physiology**
- 6. Explain the importance of acids and alkalis in human physiology**
- 7. Explain the importance of buffers in human physiology**
- 8. Explain the importance of osmosis in human physiology**
- 9. Explain the importance of electrolytes in human physiology**
- 10. Describe the biomolecules and their function**
- 11. Explain the importance of enzymatic processes in the human body**
- 12. Explain the aerobic and anaerobic energy pathways**
- 13. Describe the structure of the cell membranes**
- 14. Describe membrane transport including diffusion, facilitated diffusion, active transport, endocytosis, exocytosis, and phagocytosis**
- 15. Explain the resting membrane potential**
- 16. Describe the structure and function of the human cell organelles**
- 17. Describe the structure and function of epithelia**
- 18. Describe the structure and function of the skin**
- 19. Describe the processes of cell to cell communication**
- 20. Define neurotransmitters and hormones**
- 21. Describe endocrine reflex pathways**
- 22. Describe the endocrine glands, hormones, their effects, and interactions**
- 23. Describe neuron electric signals**
- 24. Explain cell to cell communication among neurons**
- 25. Explain the integration of the nervous system**
- 26. Describe the physiology of the sensory systems**
- 27. Describe the physiology of the autonomic nervous system**
- 28. Describe muscle physiology**

- 29. Explain the skeletal muscle reflexes**
- 30. Describe the physiology of the cardiovascular system**
- 31. Describe the physiology of the respiratory system**
- 32. Describe the physiology of the digestive system**
- 33. Describe the physiology of the urinary system**
- 34. Explain electrolyte and water balance**
- 35. Explain acid-base balance**

Selected Laboratories

- 1. Water flow Across membranes**
- 2. Diffusion**
- 3. Buffers and Homeostasis**
- 4. Membrane transport**
- 5. Hematology**
- 6. Electrocardiogram**
- 7. Blood pressure and pulse**
- 8. Skeletal muscle physiology**
- 9. Respiratory system physiology**
- 10. Digestion**
- 11. Urine Screening Tests**
- 12. General senses**
- 13. Human brain and memory**
- 14. Physiology of Reproduction**

BIOL 3405 Human Physiology

Justification

Medicine and Physician Assistant academic programs include courses in Human Anatomy and Human Physiology as suggested pre-requisite courses to acquire basic knowledge for admission to their programs. TAMIU offers the course Human Anatomy, adding the course Human Physiology will increase the possibility for TAMIU students to have access to medical academic programs.