Request for Courses in the Core Curriculum

Originating Department or College: Department of Biology and Chemistry, College of Arts and Sciences

Person Making Request: _____ Fernando Quintana____

Telephone: <u>(956) 326-2589</u>

E-mail: fquintana@tamiu.edu

Course Number and Title: BIOL 2301 – Anatomy and Physiology I

Please attach in separate documents:

____ Completed Catalog Add/Change Form

_X Syllabus

List the student learning outcomes for the course (Statements of what students will know and/or be able to do as a result of taking this course. See appended hints for constructing these statements.)

Student Learning Outcomes: After completing of the course the students will be able to:

- 1. Apply critical thinking to examine primary literature concerning molecular biology in order to effectively defend a conclusion.
- 2. Use the scientific method to design an experiment and analyze a data set to determine a conclusion.
- 3. Demonstrate effective technical communication skills.
- 4. Collaborate effectively on a research project and on a presentation of scientific results.
- 5. Discuss homeostasis
- 6. Describe the anatomy terminology and body plan
- 7. Describe the structure of human cells
- 8. Discuss the functions of human cells
- 9. Describe the tissues of the human body
- 10. Discuss the function of the tissues of the human body
- 11. Microscopically identify the tissues of the human body
- 12. Describe the structure of the integumentary system
- 13. Discuss the functions of the integumentary system
- 14. Describe the structure of the bones
- 15. Discuss the functions of the skeletal system
- 16. Identify and describe the two hundred and six named bones of the human body
- 17. Describe the structure and function of the three types of muscle tissue
- 18. Describe the functions of the muscular system
- 19. Identify and describe the major skeletal muscles of the human body
- 20. Describe the structure of neurons and neuroglia
- 21. Discuss the function of neurons and neuroglia
- 22. Describe the central nervous system
- 23. Discuss the function of the central nervous system
- 24. Describe the peripheral nervous system
- 25. Discuss the function of the peripheral nervous system including the motor, sensor, and autonomic systems
- 26. Describe the structure of the senses of the human body
- 27. Discuss the functions of the senses of the human body

Core-Curriculum Learning Outcomes:

- 1. Critical Thinking: includes creative thinking, innovation, inquiry and analysis, evaluation, and synthesis of information. (SLOs: 1 & 2)
- 2. Communication Skills: Students will demonstrate their ability to communicate effectively by using written communication. (SLOs: 3 & 4)
- 3. Empirical and Quantitative Skills: includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLOs: 2)
- 4. Teamwork: includes the ability to work effectively with others to support a shared goal. (SLOs: 4)

Component Area for which the course is being proposed (check one):

| ÷. | |
|---------------------------------|------------------------------|
| Communication | American History |
| Mathematics | Government/Political Science |
| Language, Philosophy, & Culture | Social & Behavioral Science |
| Creative Arts | Component Area Option |
| _X_ Life & Physical Sciences | |

Competency areas addressed by the course (refer to the appended chart for competencies that are required and optional in each component area):

- _X_ Critical Thinking
- ____ Communication Skills
 - _X_ Written Communication
 - Oral Communication
 - Visual Communication
- _X_ Empirical & Quantitative Skills

X Teamwork ____ Personal Responsibility ____ Social Responsibility

Because we will be assessing student learning outcomes across multiple core courses, assessment assigned in your course must include assessment of the core competencies. For each competency checked above, indicate the specific course assignment(s) which, when completed by students, will provide evidence of the competency. Provide detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking:

Students will be assigned a "Bone Density" project, in which groups of four students to identify and discuss different methodologies for measuring bone density. The students must use critical thinking to identify and discuss the strengths and limitations of different methodology and to extrapolate instances where each methodology may be appropriate. A critical thinking rubric with domains for creative thinking, depth of inquiry, evaluation of importance and synthesis of information can be scored by the instructor from the lab report, or the written lab report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Communication Skills:

At the conclusion of the "Bone Density" project, students will present their findings in a 3-4 page written report. In the written report, students will discuss the strengths and limitations of different methodologies used to determine bone density, discuss the physical forces acting on human bones and how this effects their function and the rates of bone remodeling capacity and their impact on human health, fitness and aging. The instructor can score the written lab report for organization, focus, style and grammar using a modified WIN rubric, or the report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Empirical & Quantitative Skills:

Students will have the opportunity to measure and compare the size and form of human bones in the lab. This data will be compiled as part of the lecture "Bone Density" project. Students will use this data to calculate bone density, analyze the physical forces that shape bone form and size and determine the remodeling capacity of human bones after exercise and fractures. The instructor can assess the logical reasoning behind the calculations and the appropriateness of the statistical analysis, or the written project report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Teamwork:

The same "Paper Presentation" can be used to assess teamwork as well. The students will be given a survey to assess their participation on the project as well as an evaluation of their each member's contribution during the analysis of the paper.

Personal Responsibility: N/A

Social Responsibility: N/A

 Will the syllabus vary across multiple sections of the course?
 Yes
 _X_No

 If yes, list the assignments that will be constant across the sections:
 _____Yes
 _____Yes

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every five (5) years.

The department understands that instructors will be expected to provide student work and to participate in universitywide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their courses.

Reviewed and approved by the Core Curriculum Committee on February 13, 2013.