LIFE AND PHYSICAL SCIENCES

FOUNDATIONAL COMPONENT AREA JUSTIFICATION FORM

Rationale: Please provide a rationale for the course which explains how the course being proposed fits into this component based on the component's description. For your convenience, the overall description and rationale for this component are included below.

Life and Physical Sciences (from THECB Chapter 4: 4.28)

- Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method.
- Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.
- The following four Core Objectives must be addressed in each course approved to fulfill this category requirement: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, and Teamwork.
    - Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information;
    - Communication Skills: to include effective development, interpretation and expression of ideas through written, oral and visual communication;
    - Empirical and Quantitative Skills: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions;
    - Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Rationale for Inclusion in this Category:

General Physics II is an introductory science course that introduces students to the general physical principles used to describe, explain, and make predictions about natural phenomena using the scientific method.

STUDENT LEARNING OUTCOME ALIGNMENT FORM
Life and Physical Sciences

Course Prefix/Number: Phys 105
Course Title: General Physics II

Core Objective: Critical Thinking CT1: Students will evaluate evidence in analysis, interpretation or arguments

Course SLO(s): **Students will use mathematical tools to describe and analyze natural phenomena.**

Learning Activities: **Class lectures and discussions, laboratory experiments**

Means of Assessment: **Embedded questions/problems on major exams and/or on the final exam**

Core Objective: Critical Thinking CT2: Students will synthesize varied components of information to form a rational conclusion.

Course SLO(s): **Students will synthesize the physical principles needed with the necessary mathematical tools to analyze a problem and formulate an answer.**

Learning Activities: **Practice problems, hands-on activities in a laboratory setting**

Means of Assessment: **Embedded questions/problems on major exams and/or on the final exam.**

Core Objective: Communication C1: Students will express ideas in written, visual or oral forms to a range of diverse audiences in multiple settings.

Course SLO(s): **Students will express the solution to physics problems in written or oral forms using visual representations (force diagrams, vectors, graphs, etc.)**

Learning Activities: **Oral presentations in lab**

Means of Assessment: Assessment using a rubric with **a variable amount of credit from 0% to 60% awarded based upon how close to a correct solution the student presents and a variable amount of credit from 0% to 40% awarded according to how well the student communicates their reasoning for each step in the solution to the problem.**

Core Objective: Empirical and Quantitative EQS1: Students will gather, interpret or use numerical data/observable facts to arrive at an informed conclusion.

Course SLO(s): **Students will gather, interpret numerical data/observable facts to arrive at an informed conclusion**

Learning Activities **: Data collection and analysis in lab**

Means of Assessment: **Embedded questions on major exams related to laboratory activities, and/or laboratory reports. All laboratory reports will be assessed using a rubric.**

Core Objective: Teamwork TW1: Students will work in coordination to complete specific tasks.

Course SLO(s): **Students in the laboratory setting will work in coordination to complete specific tasks**.

Learning Activities**: Group work to set up laboratory equipment, collect data, and do an analysis of data**

Means of Assessment: **Peer evaluation using a rubric. Comparison of peer evaluation data versus individual performance on major exams.**

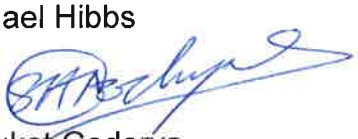
As department head, I will ensure that all faculty that teach this course are aware of the requirements that these core objectives and learning strategies be incorporated into the above referenced course. This action is taken so that Tarleton State University will be in compliance with Texas Higher Education Coordinating Board foundational component area and core objective requirements for the General Education Core Curriculum.

Signature_____

We, the undersigned faculty, support the proposed changes to this course and agree to incorporate them into our section of the above referenced course. This action is taken so that Tarleton State University will be in compliance with Texas Higher Education Coordinating Board foundational component area and core objective requirements for the General Education Core Curriculum.
(Signed document should be kept in department office, listing names below on the electronic document implies acceptance)

Jimmy McCoy

Michael Hibbs



Shaukat Goderya

Daniel Marble