Life and Physical Sciences Component Area III Core Curriculum Course Proposals Rubric Cover Sheet

This document is being provided, hopefully, to assist you as you begin the process of preparing proposals for the 2014 Core Curriculum. You can find the Core Curriculum Component Application at the Academic Affairs website under Forms: http://www.shsu.edu/~vaf_www/forms/Curriculum.html

The completed application, along with a copy of the course syllabus, needs to be submitted to the Core Curriculum Committee for their consideration. Each of the Component Areas has a Sub-Committee that will be studying the submissions. Each of these Sub-Committees has also developed a rubric that should assist you in understanding what they will be looking for in the applications.

The Life and Physical Sciences Rubric is being provided to those who desire to submit a course for the Life and Physical Sciences Component Area. In preparing proposals for this area please consider the points below. The THECB prepared the standards that the Sub-Committee is using for the development of the Rubric. Be aware that in the end the THECB will approve or not approve the courses we submit to them.

- Read the verbiage in Application and the Rubric carefully and attempt to address thoroughly all of the issues.
- The areas covered in the Rubric are addressing the Component Area criteria, the Skill Objective requirements, and an assessment for each of these.
- Assessments must include at least one direct assessment and may include indirect assessments as well.
 - O Direct assessment methods include, but are not limited to, assessment by a panel using a pre-specified scoring rubric; portfolio evaluation by designated faculty portfolio committee; embedded questions designed to measure student learning regarding program objectives; national or state standardized tests; pre/post-tests; or essays scored using rubrics established by a panel of faculty.
 - o Indirect assessment methods include, but are not limited to, surveys, student peer evaluations, IDEA results, institutional data, case studies, or focus group feedback.
- In dealing with assessment it is imperative that the same assessment be applied to each section of the course being proposed. In other words it is not acceptable to have separate instructors teaching the course developing their own assessment instrument(s). The instrument(s) should be standardized or departmental in nature.
- If one wishes to use "embedded items in exams" then please be more specific. For example, one might indicate the areas from which the exam items are drawn or perhaps say that a scenario is provided and students are asked to evaluate likely outcomes.
- If essay or papers are required the method of evaluation needs to be provided.

Our goal is to assist you in the development of the application so if we can be of help please feel free to call on us. The members of the Life and Physical Sciences Sub-Committee are listed below.

Committee Members: Anne Gaillard (Chair), Leana Bouffard, Don Freeman, Melinda Holt, Renee James, Valerie Muehsam, Bill Wells, and Ryan Zapalac

Life and Physical Sciences Foundational Component Area Core Curriculum Courses Rubric

Standard: 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.

| Indicators/Criteria for <u>Life and Physical</u> | Below Criteria | Almost Meets | Meets Criteria | Exceeds Criteria | Notes |
|--|----------------|-----------------------|------------------------|------------------------------|-------|
| Sciences Foundational Component Area | Standards | Criteria Standards | Standards | Standards | |
| There is a focus on describing, | Little or no | Some evidence of a | Sufficient evidence of | Extensive evidence of | |
| explaining, and predicting natural | evidence. | focus on describing, | a focus on describing, | a focus on describing, | |
| phenomena using the scientific method. | | explaining, and | explaining, and | explaining, and | |
| | | predicting natural | predicting natural | predicting natural | |
| Obtain scientific knowledge and use it to | | phenomena using | phenomena using the | phenomena using the | |
| make predictions about the natural world. | | the scientific | scientific method. | scientific method. | |
| | | method. | | | |
| Directly assesses students' ability to | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| describe, explain, and predict natural | evidence. | the course directly | that the course | that the course | |
| phenomena using the scientific method. | | assesses the ability | directly assesses the | directly assesses the | |
| | | to describe, explain, | ability to describe, | ability to describe, | |
| | | and predict natural | explain, and predict | explain, and predict | |
| | | phenomena using | natural phenomena | natural phenomena | |
| | | the scientific | using the scientific | using the scientific | |
| | | method. | method. | method. | |
| This course involves the understanding | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| of interactions among natural | evidence. | the course involves | that the course | that the course | |
| phenomena. | | the understanding | involves the | involves the | |
| | | of interactions | understanding of | understanding of | |
| | | among natural | interactions among | interactions among | |
| | | phenomena. | natural phenomena. | natural phenomena. | |

| Directly assesses students' ability to | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
|--|--------------|---------------------------|--------------------------|---------------------------|--|
| understand interactions among natural | evidence. | the course directly | that the course | that the course | |
| phenomena. | | assesses the ability | directly assesses the | directly assesses the | |
| | | to understand | ability to understand | ability to understand | |
| | | interactions among | interactions among | interactions among | |
| | | natural phenomena. | natural phenomena. | natural phenomena. | |
| This course involves the understanding | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| of the implications of scientific principles | evidence. | the course involves | that the course | that the course | |
| on the physical world and on human | | the understanding | involves the | involves the | |
| experiences. | | of the implications | understanding of the | understanding of the | |
| | | of scientific | implications of | implications of | |
| Apply scientific knowledge to critically | | principles on the | scientific principles on | scientific principles on | |
| evaluate information and experiences. | | physical world and | the physical world and | the physical world and | |
| | | on human | on human | on human | |
| | | experiences. | experiences. | experiences. | |
| Directly assesses students' ability to | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| understand the implications of scientific | evidence. | the course directly | that the course | that the course | |
| principles on the physical world and on | | assesses the ability | directly assesses the | directly assesses the | |
| human experiences. | | to understand the | ability to understand | ability to understand | |
| | | implications of | the implications of | the implications of | |
| | | scientific principles | scientific principles on | scientific principles on | |
| | | on the physical | the physical world and | the physical world and | |
| | | world and on human | on human | on human | |
| | | experiences. | experiences. | experiences. | |
| | | _ | ndational Component Ar | | |
| Critical Thinking Skills are integrated into | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| the content. | evidence. | critical thinking skills | that critical thinking | that critical thinking | |
| Creative thinking | | are integrated into | skills are integrated | skills are integrated | |
| Innovation | | the course content. | into the course | into the course | |
| • Inquiry | | | content. | content. | |
| Analysis of information | | | | | |
| Evaluation of information | | | | | |
| Synthesis of information | | | | | |

| Effective Communication Skills (written, | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
|---|--------------|---------------------------|-------------------------|-------------------------|--|
| oral & visual) are integrated into the | evidence. | communication | that communication | that communication | |
| content. Including: | | skills are integrated | skills are integrated | skills are integrated | |
| Development | | into the course | into the course | into the course | |
| Interpretation | | content. | content. | content. | |
| Expression of ideas | | | | | |
| Empirical and Quantitative Skills are | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| integrated into the content. | evidence. | empirical and | that empirical and | that empirical and | |
| | | quantitative skills | quantitative skills are | quantitative skills are | |
| Manipulation and analysis of numerical | | are integrated into | integrated into the | integrated into the | |
| data or observable facts resulting in | | the course content. | course content. | course content. | |
| informed conclusions. Examples include | | | | | |
| but are not limited to: | | | | | |
| | | | | | |
| Posing research questions | | | | | |
| Forming hypotheses | | | | | |
| Developing conclusions | | | | | |
| Describing distributions | | | | | |
| Performing experiments | | | | | |
| Conducting research | | | | | |
| Collecting evidence | | | | | |
| Teamwork Skills are integrated into the | Little or no | Some evidence that | Sufficient evidence | Extensive evidence | |
| content. | evidence. | teamwork skills are | that teamwork skills | that teamwork skills | |
| | | integrated into the | are integrated into the | are integrated into the | |
| Consideration of different points | | course content. | course content. | course content. | |
| of view | | | | | |
| Effectively working with others to | | | | | |
| support a shared purpose or goal | | | | | |
| | | | | | |
| Examples include (but are not limited | | | | | |
| to) working together on: performing | | | | | |
| experiments, analyzing data, and | | | | | |
| communicating experimental | | | | | |
| outcomes to others. | | | | | |

| Overall Notes: | | |
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