Home > Defining Classroom Objectives and Measuring Outcomes

Defining Classroom Objectives and Measuring Outcomes

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My project as a CU President's Teaching Scholar is to Develop, Validate and internationally Disseminate guidelines and best practices for establishing a standardized Bioastronautics curriculum in science and engineering academic programs, with plans and anticipated Outcomes outlined as follows. The overarching goal is to align industry-led 'desired attributes' for future employees with a corresponding set of 'learning objectives' aimed at incorporating human space flight into traditional science and engineering education.

DEVELOP

- 1. Document existing Human Space Flight (HSF) grad and undergrad education programs
 - a. Create database of HSF topics currently offered, where taught, and who teaches them
 - b. Correlate faculty research expertise with specific HSF course content applications
- 2. Establish a systematic academic framework for teaching HSF subject matter
 - a. Identify comprehensive list of relevant HSF education topic areas
 - b. Decompose topic areas into structured, detailed supporting subject matter
 - c. Outline ~3-5 specific Learning Objectives for each subject
 - d. Identify key scientific and engineering principles underlying each subject
 - e. Organize Topics with corresponding Learning Objectives into course syllabi

VALIDATE

- 3. Align educational goals with stakeholders (academia, government, industry & humanity)
 - a. Survey employers to prioritize HSF topics most beneficial for new hires to know
 - b. Characterize cost/benefit potential for academia to incorporate HSF education
 - c. Assess student incoming interest and outgoing retention rate in HSF
 - d. Define pathways for applying space habitat systems analysis to improving life on Earth
- 4. Determine effectiveness of HSF education programs using outcome assessment metrics
 - a. Quantify recruiting impact of HSF program on school selection
 - b. Quantify quality of HSF education (including application to other careers)
 - c. Quantify impact of HSF education on career choice, placement, performance, retention

DISSEMINATE

- 5. Disseminate curriculum guidelines to cultivate HSF education programs internationally
 - a. Solicit inputs from colleagues regarding comprehensive outline and subject matter
 - b. Coordinate an 'advertising campaign' to stimulate interest in HSF at other schools
- 6. Facilitate instruction of relevant HSF subject matter within engineering and sciences
 - a. Organize conference sessions to serve as a forum for HSF education topics
 - b. Create database of shared teaching ideas, lecture notes, photos, videos, exam questions

OUTCOMES

- 7. Publish and present outcomes in IJEE, ASEE and/or other relevant forums
- 8. Assess interest in and feasibility of forming a Society of Human Space Flight Educators

Groups audience:

President's Teaching Scholars Program

Source URL: https://www.cu.edu/ptsp/defining-classroom-objectives-and-measuring-outcomes

Links

[1] https://www.cu.edu/ptsp/defining-classroom-objectives-and-measuring-outcomes