Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Critical thinking skills

1. Critical Thinking: Develop and present a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.

Relevant Associations:

Standard Associations

- New Core Component Areas
- Mathematics (MA)
- New Core Objectives
  1. Critical Thinking (CT)

General Education/Core Curriculum Associations

1. Critical Thinking: Students will apply critical thinking appropriately to identify, analyze and resolve complex issues.
2. Quantitative Thinking: Students will demonstrate mastery of quantitative reasoning and algorithms used to address applied problems.
3. Communication: Students will develop written and oral presentations that are clear, precise, organized, efficient and appropriately adapted to audience and purpose.

Related Measures

M 1: Critical Thinking Measures

Measures:

During the period between midterms and finals, the student will provide a complete solution and explanation for a problem that has not previously been used in an assignment or lecture. The problem will be appropriate for the material that has been completed in class to date. A written paper will be required and will be scored based on a rubric developed to evaluate the Core Curriculum Outcomes:

1. Critical Thinking: For this Outcome, the paper must include:
   1. An exact statement of the original problem,
   2. A description of the student's plan to solve the problem,
   3. A description of the possible consequences of the solution, and
   4. A reason for selection the plan to solve the problem.

Source of Evidence: Written assignment(s), usually scored by a rubric

Target:

Performance Targets:

1. Critical Thinking: At least 60% of students will be scored at the Milestones (2 or 3 points) or Capstone (4 points) level in 3 of the 4 areas on the rubric.

NOTE: The rubric is in the document storage area.

SLO 2: Communication skills

2. Communication Skills: Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.

Relevant Associations:

Standard Associations

- New Core Component Areas
- Mathematics (MA)
- New Core Objectives
  2. Communication (COM)

Related Measures

M 2: Communication Measure

Measures:

During the period between midterms and finals, the student will provide a complete solution and explanation for a
problem that has not previously been used in an assignment or lecture. The problem will be appropriate for the material that has been completed in class to date. A written paper will be required and will be scored based on a rubric developed to evaluate the Core Curriculum Outcomes:

2. Communication Skills: For this Outcome, the paper must include 1. Few, if any grammar errors, 2. A clear structure that flows from statement to solution, and 3. A clear explanation of the problem and interpretation of the solution.

Source of Evidence: Academic direct measure of learning - other

Target:
Communication Skills: At least 60% of students will be scored at the Milestones (2 or 3 points) or Capstone (4 points) level in 2 of the 3 areas on the rubric. See rubric in Document Management area

SLO 3: Empirical & Quantitative Skills

3. Empirical and Quantitative: Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.

Relevant Associations:

Standard Associations

New Core Component Areas
8 Mathematics (MA)

New Core Objectives
3 Empirical & Quantitative Skills (EQS)

Related Measures

M 3: Empirical & Quantitative Measure

3. Empirical and Quantitative: For this Outcome, the paper must include 1. A detailed problem statement, including relevant contextual factors and at least one alternate approach for solving the problem, 2. A detailed solution that is well structured and yields a correct answer, and 3. A review of the results of the solution.

Source of Evidence: Academic direct measure of learning - other

Target:
3. Empirical and Quantitative Skills: At least 60% of students will be scored at the Milestones (2 or 3 points) or Capstone (4 points) level in 2 of the 3 areas on the rubric.

See rubric in Document Management area