

LSU Integrative Learning Core (ILC)

Proficiency: Problem Solving

Proficiency Dimensions	Core Assessment (performance indicators are based on the rigor of the discipline)				Graduating Assessment
Description	Four levels of performance intended for 1000 and 2000 level courses approved as ILC courses. The 'meeting' level of performance is LSU benchmark for the ILC curriculum.				The capstone level of performance is LSU benchmark for graduating seniors.
	NOT APPROACHING 0	APPROACHING 1	MEETING 2	EXCEEDING 3	CAPSTONE 4
Define Problem					Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.
Identify Strategies					Identifies multiple approaches for solving the problem that apply within a specific context.
Propose Solutions/Hypotheses					Proposes one or more solutions/hypotheses that indicates a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors as well as all of the following: ethical, logical, and cultural dimensions of the problem.
Evaluate Potential Solutions					Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply and thoroughly, all of the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.
Implement Solution					Implements the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.
Evaluate Outcomes					Reviews results relative to the problem defined with thorough, specific considerations of need for further work.

PROBLEM SOLVING RUBRIC

Definition

Problem solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal.

Framing Language

Problem-solving covers a wide range of activities that may vary significantly across disciplines. Activities that encompass problem-solving by students may involve problems that range from well-defined to ambiguous in a simulated or laboratory context, or in real-world settings. This rubric distills the common elements of most problem-solving contexts and is designed to function across all disciplines. It is broad-based enough to allow for individual differences among learners, yet is concise and descriptive in its scope to determine how well students have maximized their respective abilities to practice thinking through problems in order to reach solutions.

This rubric is designed to measure the quality of a process, rather than the quality of an end-product. As a result, work samples or collections of work will need to include some evidence of the individual's thinking about a problem-solving task (e.g., reflections on the process from problem to proposed solution; steps in a problem-based learning assignment; record of think-aloud protocol while solving a problem). The final product of an assignment that required problem resolution is insufficient without insight into the student's problem-solving process. Because the focus is on institutional level assessment, scoring team projects, such as those developed in capstone courses, may be appropriate as well.

Glossary

Contextual Factors: Constraints (such as limits on cost), resources, attitudes (such as biases) and desired additional knowledge which affect how the problem can be best solved in the real world or simulated setting.

Critique: Involves analysis and synthesis of a full range of perspectives.

Feasible: Workable, in consideration of time-frame, functionality, available resources, necessary buy-in, and limits of the assignment or task.

“Off the shelf” solution: A simplistic option that is familiar from everyday experience but not tailored to the problem at hand (e.g. holding a bake sale to "save" an underfunded public library).

Solution: An appropriate response to a challenge or a problem.

Strategy: A plan of action or an approach designed to arrive at a solution. (If the problem is a river that needs to be crossed, there could be a construction-oriented, cooperative (build a bridge with your community) approach and a personally oriented, physical (swim across alone) approach. An approach that partially applies would be a personal, physical approach for someone who doesn't know how to swim.

Support: Specific rationale, evidence, etc. for solution or selection of solution.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet level 1 performance.

	Not Approaching 0	Approaching 1	Meeting 2 (CORE ASSESSMENT BENCHMARK)	Exceeding 3	Capstone 4 (GRADUATING ASSESSMENT BENCHMARK)
Define Problem	Does not meet level 1 achievement target of 'Approaching'.	Demonstrates a limited ability in identifying a problem statement or related contextual factors.	Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is superficial.	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.	Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.
Identify Strategies	Does not meet level 1 achievement target of 'Approaching'.	Identifies one or more approaches for solving the problem that do not apply within a specific context.	Identifies only a single approach for solving the problem that does apply within a specific context.	Identifies multiple approaches for solving the problem, only some of which apply within a specific context.	Identifies multiple approaches for solving the problem that apply within a specific context.
Propose Solutions/Hypotheses	Does not meet level 1 achievement target of 'Approaching'.	Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.	Proposes one solution/hypothesis that is "off the shelf" rather than individually designed to address the specific contextual factors of the problem.	Proposes one or more solutions/hypotheses that indicates comprehension of the problem. Solutions/hypotheses are sensitive to contextual factors as well as the one of the following: ethical, logical, or cultural dimensions of the problem.	Proposes one or more solutions/hypotheses that indicates a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors as well as all of the following: ethical, logical, and cultural dimensions of the problem.
Evaluate Potential Solutions	Does not meet level 1 achievement target of 'Approaching'.	Evaluation of solutions is superficial (for example, contains cursory, surface level explanation) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is brief (for example, explanation lacks depth) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is adequate (for example, contains thorough explanation) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply and thoroughly, all of the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.
Implement Solution	Does not meet level 1 achievement target of 'Approaching'.	Implements the solution in a manner that does not directly address the problem statement.	Implements the solution in a manner that addresses the problem statement but ignores relevant contextual factors.	Implements the solution in a manner that addresses multiple contextual factors of the problem in a surface manner.	Implements the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.
Evaluate Outcomes	Does not meet level 1 achievement target of 'Approaching'.	Reviews results superficially in terms of the problem defined with no consideration of need for further work	Reviews results in terms of the problem defined with little, if any, consideration of need for further work.	Reviews results relative to the problem defined with some consideration of need for further work.	Reviews results relative to the problem defined with thorough, specific considerations of need for further work.

LSU Adapted – AAC&U Problem Solving VALUE Rubric