

Graduate
Attribute

Code

Indicator

Problem Analysis	APSC-1-PA-2	Constructs process for solving problem including justified approximations and assumptions.
	APSC-1-PA-4	Creates and applies appropriate quantitative model and analysis to solve problems.
	APSC-1-PA-5	Applies numerical modelling tool to construct model used for solving complex problems.
	APSC-1-PA-7	Evaluates validity of results and model for error, uncertainty.
	APSC-1-PA-8	Draws conclusions supported by evidence, with explicit reference to context in which they are true.

Communication	APSC-1-CO-3	Effectively communicates technical information following a prescribed format using standard grammar & mechanics.
	APSC-1-CO-6	Constructs effective figures, tables, and drawings employing standard conventions to compliment text.

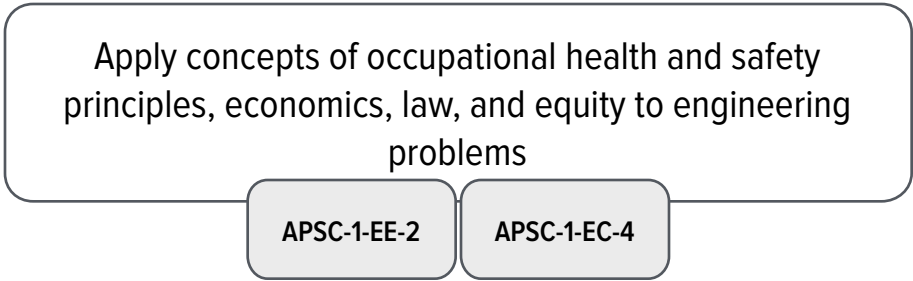
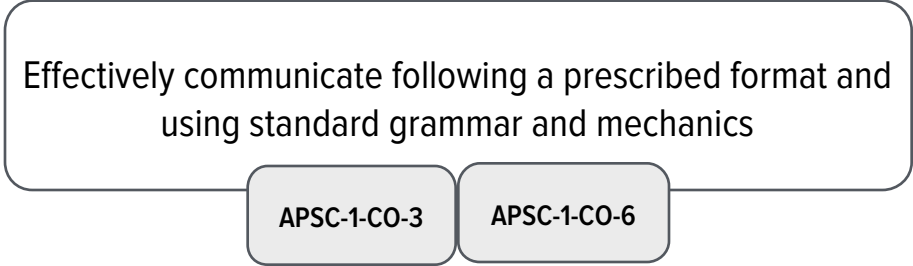
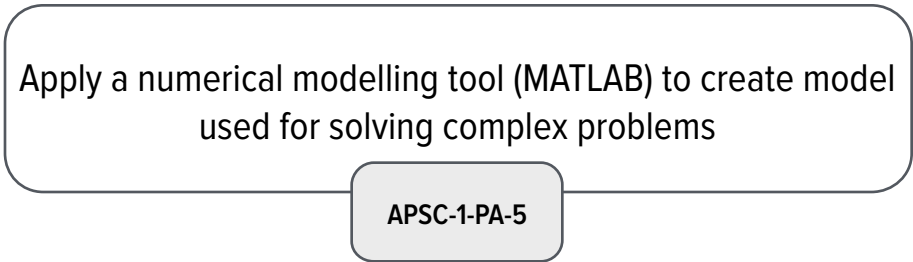
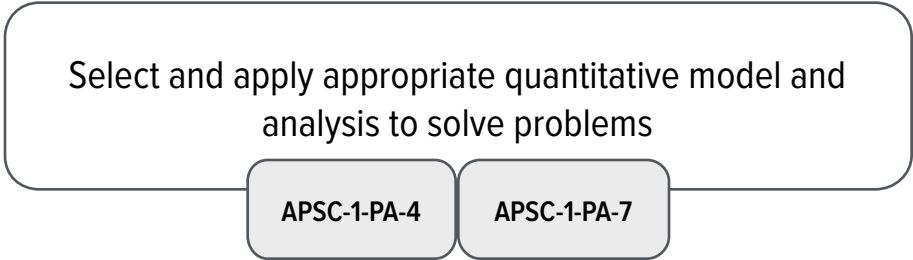
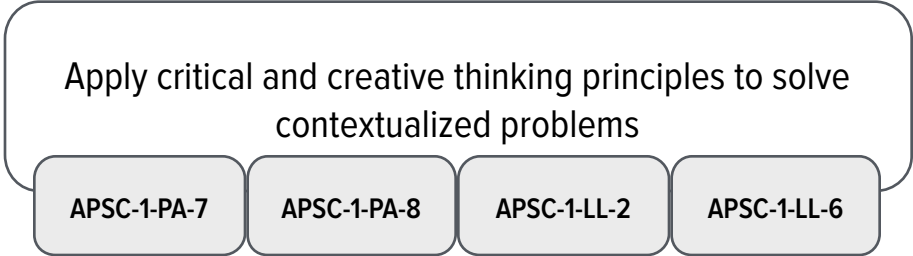
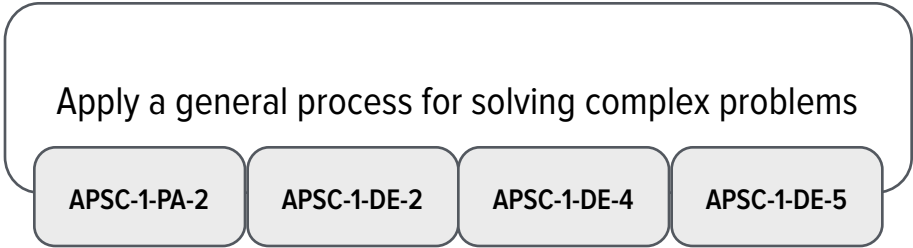
Design	APSC-1-DE-2	Accurately defines a problem, including constraints, goals, questions, stakeholders and client needs.
	APSC-1-DE-4	Produces a variety of potential design solutions suited to meet functional specifications based on stakeholder needs.
	APSC-1-DE-5	Performs systemic evaluations of the degree to which several design concept options meet project criteria

Ethics & Equity	APSC-1-EE-2	Recognizes and resolves ethical dilemmas based on ethical principles and relevant code of ethics.
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Economics	APSC-1-EC-4	Describes economic feasibility of project using time value of money and defensible financial costs and returns.
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Lifelong Learning	APSC-1-LL-2	Identifies appropriate information sources to meet the information need using a prescribed methodology.
	APSC-1-LL-6	Reviews, reflects on and makes improvements on individual learning performance.

Map to Course
Outcomes



Map to Assessment

Rubric for Project 1

		0-3 <i>Not demonstrated</i>	4 <i>Marginal</i>	5 <i>Developing</i>	
APSC-1-LL-2	Cover letter (team)	Unclear; objectives and conclusions not identified	Summary is missing some key objectives or conclusions; unsuitable for intended audience	Clear summary of objectives, conclusions and recommendations with some minor issues	Cover letter
APSC-1-DE-2	Problem definition section (team)	Problem not defined, little useful information, or information directly copied.	Some important information or biases not identified, or trivial/incorrect information included.	Problem definition is clear but missing some elements	Problem definition
APSC-1-PA-2	Proposed process section (team)	No or inadequate process described	Process identified misses critical factors; some assumptions left unidentified or unjustified.	Process is clear but missing some elements	Proposed process
APSC-1-PA-5	Model section (team)	No analysis, or model/analysis selected is inappropriate, or can't draw conclusions	Model used has significant errors or uses inappropriate assumptions.	Model has minor errors or unsupported approximations or assumptions	Model
APSC-1-PA-7	Conclusions section (individual)	No evaluation of solution.	Superficial evaluation of solution and superficial recommendations to prevent future failures	Most of the elements under "expectation" met, but not all	Conclusions
APSC-1-LL-6	Self-assessment section (individual)	No or superficial assessment.	Analysis of team and individual work identifies few areas for improvement.	Critical analysis misses some issues with the work.	Self-assessment
APSC-1-PA-8	Argumentation (individual)	Unsupported or trivial arguments	Arguments weak overall	Arguments include some but not all critical elements	Argumentation
APSC-1-CO-03	Communication (throughout report)	Report difficult to understand	Understandable but not formatted following guidelines; many grammatical errors	Clearly formatted following guidelines but obviously needs proofreading	Communication

Rubric for Project 2

		0-3 <i>Not demonstrated</i>	4 <i>Marginal</i>	5 <i>Developing</i>	
APSC-1-CO-6	Email response (team)	Unclear; objectives and conclusions not identified	Summary is missing some key objectives or conclusions; unsuitable for intended audience	Clear summary of objectives, conclusions and recommendations with some minor issues	Email response
APSC-1-DE-2	Problem definition section (team)	Problem not sufficiently defined to inform the rest of the work)	Problem definition somewhat unclear, trivial/incorrect information included, several issues with scope, goals, etc.	Problem definition is generally clear but minor issues with scope, stakeholders, goals, or information evaluation	Problem definition
APSC-1-PA-4	Model section (X2 WEIGHT) (team)	No analysis, or model/analysis selected is inappropriate, or can't draw conclusions	Model used has significant errors or uses inappropriate assumptions.	Model has minor errors, overly simplistic, or unsupported approximations or assumptions	Model
APSC-1-DE-4	Proposed new Product/ Process/ System (P/P/S) (new product section-team)	No or inadequate rationale for and analysis of P/P/S	Proposal is missing critical factors in modeling; some assumptions left unidentified or unjustified.	Proposal for P/P/S is feasible, b analysis is missing some elements (poorly modeled, model results not used, etc.)	Proposed new Product/ Process/ System
APSC-1-EC-4	Economic Analysis (new product section-team)	No useful economic analysis	Discusses economic principles in a broad or general way without relating to the actual project	Describes economic feasibility of project using time value of money but some unsupported erroneous analysis	Economic Analysis
APSC-1-DE-5	Idea generation and selection (Appendix II-team)	No description of approaches to generate or select ideas	Few ideas generated, unsupported evaluation of possible approaches	A range of ideas presented and evaluated with some minor issues	Idea generation and selection
APSC-1-EE-2	Ethical reasoning (Appendix II and email - team)	Does not recognize an ethical dilemma, or provides an unsupported solution.	Identifies approach to resolving an ethical dilemma that is not supported, or misses important stakeholders	Recognizes and resolves ethical dilemmas with limited reference to principles and codes, or has minor issues in approach	Ethical reasoning
APSC-1-CO-03	Communication (throughout team report)	Report difficult to understand	Understandable but not formatted following guidelines; many grammatical errors	Clearly formatted following guidelines but obviously needs proofreading, overly verbose	Communication
APSC-1-PA-7	Conclusions section (individual)	No evaluation of solution.	Superficial evaluation of solution and superficial recommendations	Draws conclusions that are tenuously connected to model results, or not well supported.	Conclusions
APSC-1-LL-6	Self-assessment section (individual)	No or superficial assessment.	Analysis of team and individual work identifies few areas for improvement.	Critical analysis misses some issues with the work.	Self-assessment
APSC-1-PA-8	Argumentation (throughout individual sections)	Unsupported or trivial arguments	Arguments weak overall	Arguments include some but not all critical elements	Argumentation
APSC-1-CO-3	Communication (throughout individual sections)	Difficult to understand	Understandable but many grammatical errors , inconsistencies, etc.	Work needs proofreading, overly verbose	Communication