

Presentation (marked by instructor)

Outcome/Category /Weight	Not demonstrated	Below expectation	Minimal pass	Meets expectation	Above expectation
Problem analysis / Implement Tools [MTHE-PA-3-2(b)] / 10	No mathematical models or tools used to analyse engineering problems.	Discusses mathematical models and tools to analyse engineering problems, but shows no evidence of utilization or implementation.	Implements mathematical models and tools to analyse engineering problems weakly, without development or rigour.	Implements mathematical models and tools to analyse engineering problems.	Accurately and precisely implements sophisticated mathematical models and tools to analyse engineering problems.
Investigation / Analysis [MTHE-IN-3-3(b)] / 10	No use of quantitative metrics and/or uses data collected to draw conclusions.	Use of quantitative metrics and/or uses data collected are irrelevant, incorrect or do not draw conclusions.	Uses quantitative metrics and/or uses data collected to draw weak conclusions.	Develops quantitative metrics and/or uses data collected to draw valid conclusions.	Develops reliable quantitative metrics and/or uses data collected to draw valid conclusions.
Investigation / Validation [MTHE-IN-3-3(c)] / 5	No experimentation to validate mathematical models and techniques.	Minimally or incorrectly uses experimentation to validate mathematical models and techniques.	Uses experimentation to validate mathematical models and techniques.	Uses experimentation to validate mathematical models and techniques and shows understanding of the necessity of model validation.	Uses experimentation to properly validate mathematical models and techniques and shows exemplary understanding of the necessity of model validation.
Design / Identify Design Problem [MTHE-DE-3-4(a)] / 10	Stakeholder needs contributing to design not identified.	Missing or trivial identification and consideration of stakeholder needs.	Significant stakeholders are identified with nominal description.	All relevant stakeholders are identified and their needs are well defined.	All relevant stakeholders are identified with clear descriptions, relevance, and impact of their needs.
Design / Design Specifications [MTHE-DE-3-4(b)] / 10	No explicit design criteria or constraints.	Missing, trivial, vague or unrelated criteria or constraints.	Simplistic criteria and constraints with some relevance to stakeholder needs.	Specific and measurable criteria and constraints developed from research and stakeholder needs.	Comprehensive, detailed and precise criteria and constraints logically developed from analysis of research and stakeholder needs.
Design / Assess Solution [MTHE-DE-3-4(d)] / 5	No assessment of final solution against project metrics.	Superficial assessment of final solution against project metrics.	Subjective, unsupported, or incomplete assessment of the final design against major project metrics.	Assessment of the overall design against all project metrics with supporting explanation.	Thorough assessment of specific design elements that provides a convincing explanation of design performance against well-defined project metrics.

Presentation (cont'd)

Outcome/Category /Weight	Not demonstrated	Below expectation	Minimal pass	Meets expectation	Above expectation
Engineering tools / Develop Tools [MTHE-ET-3-5(a)] / 5	Does not identify or use mathematical tools or does not integrate when solving engineering problems	Identifies mathematical tools but does not integrate when solving engineering problems	Uses mathematical tools and discusses their application in solving engineering problems	Develops and applies mathematical tools and integrates them accurately in solving engineering problems	Develops sophisticated mathematical tools and integrates them seamlessly in solving engineering problems
Communication / Graphics [MTHE-CO-3-7(c)] / 10	There are no figures or content in figures and tables.	No useful figures or content in figures and tables is unclear or irrelevant.	Some information in figures and tables is difficult to interpret.	Figures and tables complement written information.	Figures and tables effectively summarize complex information to compliment and enhance dicussion of concepts or findings.
Communication / Oral Communication [MTHE-CO-3-7(e)] / 20	No preparation, and relies exclusively on use of memory aids. Presentation is difficult to follow. Unable to respond to fundamental questions.	Clear lack of preparation, and relies on use of memory aids. Space fillers makes it very difficult to follow. Information conflicts with visual aids. Unable to respond to fundamental questions.	Lacking knowledge of subject and presentation seems rehearsed or is a chronological summary. Reading from memory aids or visual aids. Too many space fillers and poor response to questions.	Connected to audience and easy to follow. Very few if any space fillers such as um or like, little use of memory aids. Good response to questions.	Demonstrates a distinct enthusiasm, makes the topic interesting, and does not use space fillers, or memory aids. Uses slides as a guide, but does not rely on slides for content. Thoughtful and professional response to questions
Professionalism / Professional Bearing [MTHE-PR-3-8(a)] / 5	Demonstrates no skills expected in the workplace/industry of engineering.	Traits of professional skills expected in the workplace/industry of engineering seem superficial or an afterthought.	Demonstrates traits of professional skills as expected in the workplace/industry of engineering.	Demonstrates professional skills as expected in the workplace/industry of engineering.	Demonstrates exemplary professional skills as expected in the workplace/industry of engineering i.e. formal language, respectful of peers and colleagues contributions etc.
Impact of Engineering / Triple Bottom Line [MTHE-IM-3-9(a)] / 10	Missing or not considered in the design process.	Superficial or considered as an afterthought to the design process.	Noted in project description but not clearly considered as a factor in the design process with minimal consideration of impacts on Triple Bottom Line.	Relevant factors are identified and considered in the overall design process and consideration to impacts on Triple Bottom Line.	Report discussion conveys how relevant factors were explicitly applied in shaping the overall direction of the design and explicit impacts on Triple Bottom Line.