

Outcomes for MTHE 494

Background

The Canadian Engineering Accreditation Board (CEAB) is changing how it assesses engineering programmes, and as a result there will be some changes with how courses are being assessed. Essentially, the CEAB is evaluating programmes on whether they assess students in certain “outcome” categories, and whether they use this student assessment for improving the programme.

What is in this document

In this document is the outcome assessment for MTHE 494. This means that all outcomes that are being assessed for MTHE 494 are listed, as well as descriptions of how students will be assessed in each category. In each category students will be assessed according to the criterion “Not demonstrated,” “Minimal pass,” “Meets expectation,” and “Above expectation,” according to the extent to which the marker feels that the outcome is being met.

How grades are calculated

Students in MTHE 494 are assessed in the following ways with the following weights.

Short essay	10%
Short essay editing	5%
Long essay outline	10%
Long essay draft	15%
Long essay final copy	40%
Presentation	10%
Attendance	10%

In the pages following you will see, for three of the assessed items listed above, the outcomes that are matched to it. Also listed is the weight assigned to each outcome for that assessed item. Who the markers are is designated for each assessed item.

Let us first describe how the mark is calculated for each of these three outcome assessed items. The marker will assign a number from 0–4 in each of the outcome categories according to how the student’s performance matches the expectations. This is the “raw score” for that outcome. The raw score of 0 is reserved for cases where the student did not do the work which is being used to do the outcome assessment. The raw score will be multiplied by the weight assigned to that outcome to get the “weighted score” for that outcome. Since the weights add to 100, the sum of the weighted scores will be bounded above by 400. Thus the mark for the assessed item is the weighted score multiplied by $\frac{\alpha}{400}$ where α is the percentage for that assessed item from the list above.

For the other assessed parts of the course, the marker will mark in a “standard” manner.

It’s that easy!

Short essay (marked by Catherine Dale)

Outcome/Category /Weight	Not demonstrated	Minimal pass	Meets expectations	Above expectation
Communications / Discipline-specific conventions / 25	Seldom writes and revises documents using appropriate discipline-specific conventions	Often, but not always, writes and revises documents using appropriate discipline-specific conventions	Writes and revises documents using appropriate discipline-specific conventions	Shows superior abilities when writing and revising document, always using appropriate discipline-specific conventions
Communications / Technical vocabulary / 20	Seldom demonstrates accurate use of technical vocabulary	Often, but not always, demonstrates accurate use of technical vocabulary	Demonstrates accurate use of technical vocabulary	Demonstrates superior understanding and use of technical vocabulary
Communications / Referencing / 10	Seldom uses appropriate referencing to cite previous work	Often, but not always, uses appropriate referencing to cite previous work	Uses appropriate referencing to cite previous work	Shows exceptional knowledge of previous work and cites it appropriately
Impact of engineering / Consider social and environmental factors / 15	Seldom considers economic, social, and environmental factors and/or impacts in decisions, or does so inappropriately	Often, but not always, considers economic, social, and environmental factors and/or impacts in decisions	Considers economic, social, and environmental factors and/or impacts in decisions	Shows superior understanding of the role of economic, social, and environmental factors and/or impacts in decisions
Impact of engineering / Explains context of system / 15	Seldom explains the societal, enterprise, and/or technical context of the system	Often, but not always, explains the societal, enterprise, and/or technical context of the system	Explains the societal, enterprise, and/or technical context of the system	Shows a superior understanding of the societal, enterprise, and/or technical context of the system
Lifelong learning / Evaluates information / 15	Seldom critically evaluates procured information for authority, currency, and objectivity, or does so improperly	Often, but not always, critically evaluates procured information for authority, currency, and objectivity	Critically evaluates procured information for authority, currency, and objectivity	Shows superior understanding of the authority, currency, and objectivity of procured information

Long essay final copy (marked by Catherine Dale)

Category/Outcome /Weight	Not demonstrated	Minimal pass	Meets expectations	Above expectation
Communications / Discipline-specific conventions / 20	Seldom writes and revises documents using appropriate discipline-specific conventions	Often, but not always, writes and revises documents using appropriate discipline-specific conventions	Writes and revises documents using appropriate discipline-specific conventions	Shows superior abilities when writing and revising document, always using appropriate discipline-specific conventions
Communications / Technical vocabulary / 10	Seldom demonstrates accurate use of technical vocabulary	Often, but not always, demonstrates accurate use of technical vocabulary	Demonstrates accurate use of technical vocabulary	Demonstrates superior understanding and use of technical vocabulary
Communications / Referencing / 10	Seldom uses appropriate referencing to cite previous work	Often, but not always, uses appropriate referencing to cite previous work	Uses appropriate referencing to cite previous work	Shows exceptional knowledge of previous work and cites it appropriately
Professionalism / Integrates standards / 10	Seldom integrates standards, codes of practice, and legal and regulatory factors into decision-making processes (as appropriate), or does so improperly	Often, but not always, integrates standards, codes of practice, and legal and regulatory factors into decision-making processes (as appropriate)	Integrates standards, codes of practice, and legal and regulatory factors into decision-making processes (as appropriate)	Shows a superior knowledge and application of standards, codes of practice, and legal and regulatory factors in the decision-making processes (as appropriate)
Impact of engineering / Consider social and environmental factors / 15	Seldom considers economic, social, and environmental factors and/or impacts in decisions, or does so inappropriately	Often, but not always, considers economic, social, and environmental factors and/or impacts in decisions	Considers economic, social, and environmental factors and/or impacts in decisions	Shows superior understanding of the role of economic, social, and environmental factors and/or impacts in decisions
Impact of engineering / Explains context of system / 15	Seldom explains the societal, enterprise, and/or technical context of the system	Often, but not always, explains the societal, enterprise, and/or technical context of the system	Explains the societal, enterprise, and/or technical context of the system	Shows a superior understanding of the societal, enterprise, and/or technical context of the system
Lifelong learning / Evaluates information / 10	Seldom critically evaluates procured information for authority, currency, and objectivity, or does so improperly	Often, but not always, critically evaluates procured information for authority, currency, and objectivity	Critically evaluates procured information for authority, currency, and objectivity	Shows superior understanding of the authority, currency, and objectivity of procured information
Lifelong learning / Self-education / 10	Demonstrates few, if any, of the skills needed for self-education	Demonstrates some of the skills needed for self-education	Demonstrate skills needed for self-education	Shows superior traits for self-education

Presentation (marked by instructor)

Category/Outcome /Weight	Not demonstrated	Minimal pass	Meets expectations	Above expectation
Communications / Technical vocabulary / 20	Seldom demonstrates accurate use of technical vocabulary	Often, but not always, demonstrates accurate use of technical vocabulary	Demonstrates accurate use of technical vocabulary	Demonstrates superior understanding and use of technical vocabulary
Communications / Confident presentations / 60	Oral communication is often poorly thought out, ill-prepared, and not delivered in a convincing manner	Is sometimes shaky or ill-prepared for formal and informal oral communications	Demonstrates confidence preparation in formal and informal oral communications	Is extremely capable and well-prepared for all oral communication
Lifelong learning / Self-education / 20	Demonstrates few, if any, of the skills needed for self-education	Demonstrates some of the skills needed for self-education	Demonstrate skills needed for self-education	Shows superior traits for self-education