Delivery:

Online using Avenue quizzing tool and an Assignment dropbox.

Date: **Wednesday, December 16th**
Availability: 6-hour window between **4:00pm and 10:00pm**
Duration: Multiple Choice and Minitab 'Quiz' component – **2.5 hours {150 minutes}**
End: Dropbox for *Written Response* closes **@10:00pm**

Coverage:

Module 1- 4 (33%); Modules 5-8 (67%)

Preparation:

- Chapter readings/suggested problems
- Self-paced Tutorials (Minitab)
- Lecture videos, notes and powerpoints
- Suggested links (in ppts and Avenue)

- Activities
- Quality Trainer
- Module Self-tests on Avenue

Permitted/required:

No restrictions on aids or resources. Completion of the exam in Avenue is considered a signed acknowledgement that you have read and understood the McMaster Academic Integrity Policy and that all work submitted is your own. **Note – Written Response questions will be submitted to the corresponding Assignment drop-box on A2L with Turnitin® plagiarism software enabled.**

Format:

All instructions, links and details for the exam will be made available on the homepage of the ENGTECH 2ES3/3ES3 course shell on Avenue. Login to Avenue on December 16th and navigate to the homepage.

There will be three parts to the exam:

Part 1: Multiple Choice (40 questions - 40 marks)

Part 2: Minitab (14 questions - 22 marks)

Part 1 and Part 2 are separate sections of single a *quiz* on Avenue.
Minitab questions are similar to the quizzes. You will use a data set (Minitab Data Set Library) and answer questions as either multiple choice or short answer. PAY ATTENTION to decimal and format requirements

Part 3: Written Response (2 reflection questions - 20 marks)

To be completed using a formatted **Submission Sheet** and associated **drop-box** on Avenue to Learn. Links to the Submission Sheet and drop-box will be provided on the homepage for easy navigation during the exam. Turnitin® plagiarism software will be used.

You are being given the opportunity in **advance of the exam** to reflect on the content of Engineering Statistics as it relates to your learning and the world at large. To prepare for the *Written Response*:

1. **Choose one (1) reflection question** from the five (5) options listed below and reflect on the concepts that have been examined in the course. Include the questions number and name in response. *(10 marks)*
2. **Answer the Big Picture question** listed below the reflection question options. *(10 marks)*

Suggestions:
- o To ensure that you relate your response to the course material, carefully consider the topics and content covered this semester. A list of topics can be drawn from the Course Outline, Weekly Timetable, and the Content modules on Avenue.
- o Be prepared to discuss specific concepts from the topics.
- o Connections of concepts and topic areas to reflection must be clear and well explained.

Expectations:
- o Give a thoughtful answer – we will be using the rubric provided below.
- o Completeness of response– start and end your thoughts without digression.
- o Valid response – answer the question given.
- o 250 words minimum, 400 words maximum *per response question*

Reflection Questions (choose 1)

1.   Persistence

I have emphasized the importance of struggling; that it's normal and part of the process of learning. Describe an instance, so far in this course, where you struggled with a problem or concept, and initially had the wrong idea, but then later realized your error. In this instance, in what ways was a struggle or mistake valuable to your eventual understanding. You might also discuss whether struggling built aspects of character in you (e.g. endurance, self-confidence, competence to solve new problems) and how these virtues might benefit you in later ventures.

2.   Disposition toward beauty

Consider one idea from the course that you have found beautiful, and explain why it is beautiful to you. Your answer should: (1) explain the idea in a way that could be understood by a classmate who has not yet taken this class and (2) address how this beauty is similar to or different from other kinds of beauty that human beings encounter.

3.   Strategy

For any problems that you struggled to solve this semester, suggest a strategy you tired or might try to tackle the problem, and show what happened as a result. Describe any strategic gaps you were unable to bridge, and list 3 helpful insights that may help another person trying to tackle the problem.

4.   Enjoyment

What three ideas/concepts did you most enjoy from the course, and why? Choose one idea/concept of moderate difficulty and reconstruct how you would explain it to others using real world examples or an analogy.

5.   Research

Formulate a research question related to the *course material* that you would like to answer. Describe how you would go about conducting the research. The question is not about using the course material, but researching the course material itself. You do not have to answer the question. Just ask a good question whose answer is unknown to you, and doesn't have an obvious answer based on what you know from the course.

Big Picture (everyone must answer)

How did the ideas of this course enlarge your sense of what it means to do statistics? Reflect on one way you see the world differently through the lens of statistics. Be sure to tie your reflection to the world around you, to our current circumstances, or any world view outside of the course.

Reflecton Ques	Target	Acceptable	Developing	Criterion Score
Thoughtful answer to the given reflection question and connection to the course.	3 points Well thought out reflection; engaging discussion with obvious connections to the course	1.5 points Sufficient attempt at reflection; good discussion with obvious connections to the course	0 points Minimal attempt at reflection; weak discussion with very little connection between statements and very little connections to the course	/ 3
Completeness of response including examples or specific evidence/artifacts. All elements of the question have been considered.	3 points Appropriate evidence and/or artifacts given; fully discussed with clear connections to the topic area.	1.5 points Sufficient evidence and/or artifacts given; sufficient discussion; lacks depth and/or obvious connection	0 points Minimal attempt at reflection; weak discussion with very little connection between statements and very little connections to the course	/ 3
Response is valid - all statements and discussions are pertinent to the subject of the question chosen	3 points Validity is clear and response stays on topic.	1.5 points Response occasionally drifts off topic.	0 points Response does not stay on topic or is not directly related to the intended question.	/ 3
Written response is error free (spelling, punctuation, syntax) and meets the length requirements	1 point All requirements for writing and presentation met.	0.5 points Most requirements for writing and presentation met.	0 points Either too short, too long or so many errors in spelling to make reading difficult.	/ 1

Big Picture	Target	Acceptable	Developing	Criterion Score
Thoughtful answer to the Big Picture question	3 points Well thought out reflection; engaging discussion with obvious connections to the course	1.5 points Sufficient attempt at reflection; good discussion with obvious connections to the course	0 points Minimal attempt at reflection; weak discussion with very little connection between statements and very little connections to the course	/ 3
Completeness of response including examples or specific ties to the world or circumstances outside the course.	3 points Appropriate examples and/or ties given; fully discussed with clear connections to the course	1.5 points Sufficient evidence and/or examples; sufficient discussion; lacks depth and/or obvious connection	0 points Minimal attempt at reflection; weak discussion with very little connection between statements and very little connections to the course	/ 3
Response is valid - all statements and discussions are pertinent to the Big Picture question.	3 points Validity is clear and response stays on topic.	1.5 points Response occasionally drifts off topic.	0 points Response does not stay on topic or is not directly related to the intended question.	/ 3
Written response is error free (spelling, punctuation, syntax) and meets the length requirements	1 point All requirements for writing and presentation met.	0.5 points Most requirements for writing and presentation met.	0 points Either too short, too long or so many errors in spelling to make reading difficult.	/ 1

Total				/ 20

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