

Pearson
Higher Nationals in
Engineering

ASSIGNMENT BRIEF for MET and EEET

UNIT: 4 Managing a Professional Engineering Project



Assignment Brief

Student Name/ID Number	
Unit Number and Title	4: Managing a Professional Engineering Project
Academic Year	2019
Unit Tutor	Mr. Russell Ramrattan
Assignment Titles	Section 1 (S1): Proposal, Section 2 (S2): Report, Section 3 (S3): Presentation.
Issue Date	EEET: 08 December 2021 MET: 09 December 2021
Submission Date	EEET: S1: 20 January 2022, S2: 10 March 2022, S3: 31 March 2022 MET: S1: 19 January 2022, S2: 09 March 2022, S3: 30 March 2022
IV Name & Date	
Submission Format	
<ol style="list-style-type: none"> 1. Students are required to user citing and Referencing either Chicago Manual of Style 16th ed. Or Harvard Style and note that: <ul style="list-style-type: none"> • Citing is to include a brief note in the text of your paper indicating that the information at that point comes from an outside source • Citations occur throughout the body of a work – these are called in-text citations • Corresponding sources i.e. references are listed in the Reference List 2. A1 due in week 6, A2 due in week 13 and A3 due in week 15 shall ALL take the form of a bound, double or single sided printed report on letter size paper of font size 12. The table of contents shall be disclosed in class sessions and an appendix or appendices shall include all necessary reference material. Recommended word count of the reports shall be A1: 1000-1500, A2: 5000-7500 and A3: 1000-1500. Upper limits are not restrictive. 3. A3, the Audio/Visual Presentation in PowerPoint due in Week 15 shall take to format of a slideshow of no more than 20 slides for a period of no more than ten minutes. 4. The Proposal due in Week 6 has a standard format included herein. Milestones 1 & 2 shall be clearly indicated, and students shall be held accountable for achieving same. 5. The Reflective Log Template and Performance Review Template due in Weeks 13 & 15 respectively has a standard format included herein. 6. It is important that students are made aware of the issue of plagiarism at the onset of the unit. Students are required to sign a declaration stating that the work they are submitting is their own. 	

Unit Learning Outcomes
LO1. Formulate and plan a project that will provide a solution to an identified engineering problem. LO2. Conduct planned project activities to generate outcomes which provide a solution to the identified engineering problem. LO3. Produce a project report analysing the outcomes of each of the project processes and stages. LO4. Present the project report drawing conclusions on the outcome of project.
Assignment Brief and Guidance
The assigned topic for MET is to design a CNG system at a liquid fuel gas station and <u>EEET is to design a Solar Powered charging system for Electric Vehicle charging at a liquid fuel gas station.</u> The theme of SAFETY must be maintained. This topic must then be researched, and you shall produce: <ol style="list-style-type: none">1. Proposal2. Report3. Presentation Assessment Criteria Section 1: Proposal (LO1) a) Illustrate the effect of legislation and ethics in developing the project plan by comparing code of ethics of one foreign and one local Engineering Authority and discussing the ethical implications of decision making in choosing the solution to the identified engineering problem. Undertake a feasibility study to justify project selection by performing simple risk assessment and life cycle costing amongst the solutions under consideration. Create a project plan for the engineering project by developing a simple scope of works and schedule of works for the distinct activities involved up to the end of the design stage. Select an appropriate engineering-based project solution, giving reasons for the selection by researching MET/EEET websites for appropriate research project solutions and supporting with ten secondary sources of information such as websites, articles, journals, etc. Section 2: Report (LO2 & LO3) b) Critically evaluate the success of the project plan making recommendations for improvements by using exclusively a Reflective Log (see template below) which discusses your own behaviours while you were working on the project in terms of ethics, safety and professional standards of behaviour. Critically analyse the project outcomes making recommendations for further development through development of a morphological chart and in the evaluation methods to identify and suggest methods of improvement. Explore alternative methods to monitor and meet project milestones through discussions

on various methods (PERT, critical path method and Gantt charts) as well as the future of project management tools such as WorkLens or Microsoft Project Online etc. and justify your own selection. Use appropriate critical analysis and evaluation techniques to analyse project findings by comparing the results of primary and secondary research and showing utilization of one of the three methods of evaluation of design alternatives (numerical evaluation matrix, priority checkmark or best of class chart). Produce a project report covering each stage of the project and analysing project outcomes in one complete assignment submission. Conduct project activities, recording progress against original project plan by documenting the collection of secondary research followed by primary research and student must record progress using a Gantt chart or other justified tool to determine planned versus actual progress in weeks 9, 11 and 13 in formative feedback sessions.

Section 3: Presentation (LO4)

c) Critically analyse the project outcomes making recommendations for further development using the reflective log (see below for sample). M4 Analyse own behaviours and performance during the project and suggest areas for project improvement by completing a performance review (see below for sample). Present the project report using appropriate media to an audience such as a narrated PowerPoint presentation.

Student Deliverables:

- S1 Week 6: Proposal (with project management plan and project logbook)
- S2 Week 13: Report (with reflective log, performance review and project logbook)
- S3 Week 15: Presentation (with performance review and project logbook)

Milestones and interim feedback

The purpose of milestones is to monitor the progress of the project and to maintain momentum, making it more likely that the project will succeed. Each milestone should be a clear, achievable activity that the student aims to achieve by a predetermined time. Students should agree at least two milestones with their tutor. Examples of milestones include:

- formulating a first draft of project plan or proposal
- formulating a first draft of primary research survey questionnaire
- completing all secondary research
- completing all primary research
- formulating first draft of report
- formulating first draft of presentation

At each milestone, the tutor liaises with you to check whether it has been achieved. They may need to redirect you if necessary.

Reflective Log Template

Name:
Project title:
Date:
Update on weekly research/tasks achieved
Points to consider: <ul style="list-style-type: none">• What have you completed?• Did you fulfil task requirements?• Are you on track and within deadlines set?• Did you need to make any changes to your project management plan?
Any risks and/or issues identified?
Points to consider: <ul style="list-style-type: none">• Did you identify risks/issues with a lack of skills required for undertaking research/tasks?• Did you identify any additional risks/issues that have an impact on the project management plan?
Problems encountered
Points to consider: <ul style="list-style-type: none">• What barriers did you face?• How did you overcome them?
New ideas and change of project direction
What have you learned about yourself this week?
Points to consider: <ul style="list-style-type: none">• How did you feel when you had to deal with tasks/problems?• Did you find it useful to complete the tasks?• How well have you performed? What did you contribute?• What can you improve on next week?• How might this learning apply in the future?
Tasks planned for next week
Points to consider: <ul style="list-style-type: none">• Which tasks are a priority?• Have you set aside sufficient time for completion?
Project plan status to date (on, ahead, behind)

Supervisor comments to address

Performance Review Template

Performance Review

- What was the project supposed to accomplish?
- Did the project succeed in its aims? How do you know? Specifically, please outline any evaluation and assessment undertaken.
- What things do you think worked well and why? Evaluate all aspects of the project (e.g. initial inception, project activities and project outcomes) from a range of perspectives.
- What problems emerged during the project and how were they tackled? Was there timely identification of issues and resolution during the project process?
- What did you learn from undertaking the project?
- How would you rate your performance as project manager?
- What strengths and weaknesses of your performance did you identify?
- How will this inform and support your continuous professional engineering development?

Assessment Criteria

Learning Outcomes and Assessment Criteria		
Pass	Merit	Distinction
LO1 Formulate and plan a project that will provide a solution to an identified engineering problem		D1 Illustrate the effect of legislation and ethics in developing the project plan
P1 Select an appropriate engineering-based project, giving reasons for the selection. P2 Create a project plan for the engineering project.	M1 Undertake a feasibility study to justify project selection.	
LO2 Conduct planned project activities to generate outcomes which provide a solution to the identified engineering problem		D2 Critically evaluate the success of the project plan making recommendations for improvements.
P3 Conduct project activities, recording progress against original project plan.	M2 Explore alternative methods to monitor and meet project milestones, justify selection of chosen method(s).	
LO3 Produce a project report analyzing the outcomes of each of the project processes and stages		D3 Critically analyze the project outcomes making recommendations for further development.
P4 Produce a project report covering each stage of the project and analyzing project outcomes.	M3 Use appropriate critical analysis and evaluation techniques to analyze project findings.	
LO4 Present the project report and reflect on the value gained from conducting the project and potential improvements in future projects		D3 Critically analyze the project outcomes making recommendations for further development.
P5 Present the project report using appropriate media to an audience.	M4 Analyze own behaviours and performance during the project and suggest areas for improvement.	