



MANUKAU INSTITUTE OF TECHNOLOGY

TECHNOLOGY PARK CAMPUS
SCHOOL OF PROFESSIONAL ENGINEERING

Assessment For: BET 523.613 MG6136 Engineering Project

Assessment: Assignment 2 – Detailed Project Design

Assessment Weighting: 40 %

Assessment Due Date: 4:30pm on 17/05/2024 – (Friday, Week 11)

Lecturer: Cornelis Kok

Semester: [1] 2024

This Assessment Covers the Following Learning Outcomes:

Learning Outcome 1: *Development preliminary design(s), based on given specification, for an engineering project relevant to their strand (Civil, Mechanical, Electrical, Electronics, Fire).*

Learning Outcome 2: *Develop a plan or design parameters considering functionality, safety, environmental, cultural and ethical issues.*

Learning Outcome 3: *Undertake well-defined planning and produce as project output.*

Learning Outcome 4: *Produce supporting documentation relevant to project output.*

Learning Outcome 5: *Evaluate compliance of the project output against specification.*

Learning Outcome 6: *Present findings to an audience in a professional manner.*

Assessment Duration: [_____] hours [_____] minutes

Student ID: _____

Additional Assessment Comments:

Create a report that:

- Provides fully completed calculations for all aspects of the work.
 - Provides the “calculations planning sheet”
 - Summarises calculations used to verify your design. This may include stress analysis, fluid mechanics, machine dynamics, or other related mechanical engineering analysis.
 - Provides a summary of the full workable solution
 - Provides an appendix of relevant calculations and data sheet/s
- Provides full production and assembly drawings
 - Create a report that organises and summarises engineering drawings for the selected design.
 - Submit solidworks or AutoCAD models of the final solution. This includes all sldprt, slddrw and sldasm files or similar.
- Fully costs the final solution
 - summarise the costings for manufactured and purchased items.

- Include any emails to support quotes from industry, screen shots of websites used for quotes, excerpts from catalogues, or any other supporting materials for quotations

Your work will be marked as per the marking schedule on the next page.

Submit your completed assignment via CANVAS. Note that any candidate, who aids, attempts to aid, obtains aid or attempts to obtain aid from another candidate will be disqualified and further dealt with under the institutional disciplinary procedures for cheating. This could result in the offender's expulsion from the institution. All work must be completed by the candidate.

Detailed Project Design
MARKING SCHEME (40% weighting)
523.613 MG6136 Engineering Project

NAME: _____ **Date:** _____

Attribute Element	Learning Outcomes	Deliverables	0 No Marks	1 Developing/Not achieved	2 Achieved	3 Merit	4 Excellence	Score	Weighting	Weighted
								(from 0 to 4)		score
1. Engineering Knowledge 2. Problem Solving	LO3	Design calculations completed for chosen option.	Not completed	Some basic calculations but not completed for all aspects of the design.	Most calculations completed but not on well designed work sheets	Fully completed calculations for only parts of the project on well designed worksheets.	Fully completed calculations for all aspects of the project on well designed work sheets.	4	3.75	15
3. Design/Development of Solutions	LO5	The chosen idea is developed into a full workable solution.	No information given.	Only partially developed.	Partially developed concept with sketches and comments.	Fully developed concept with some sketches and comments.	Fully developed concept with full sketches and comments.	4	1.25	5
5. Modern tool Usage (Drawings - CAD, Solidworks, FEA, 3D Printing)	LO3	Produce detailed drawings for the manufacture and construction of the solution.	No drawings supplied.	Sketches provided but no detailed drawings.	Partially completed drawings supplied.	Only production or assembly drawings supplied.	Full production and assembly drawings supplied.	4	3.75	15
11. Project Management and Finance	LO3, LO5	Manufactured parts are identified and costings done.	No costs shown.	Only material costs have been estimated.	Only partial costs shown for materials, development and manufacture.	Most costs shown for materials, development and manufacture.	Project is fully costed for materials, development and manufacture.	4	0.625	2.5

Attribute Element	Learning Outcomes	Deliverables	0 No Marks	1 Developing/Not achieved	2 Achieved	3 Merit	4 Excellence	Score	Weighting	Weighted score
								(from 0 to 4)		
11. Project Management and Finance	LO3, LO5	Purchased items are identified and costings done. (Milestone 6- Drawings & Costing)	Not done	some parts identified. No costing	Only partially identified and some costs	Most bought parts are listed with associated costs.	All bought parts are listed with associated costs.	4	0.625	2.5