

Name of Student: _____

Matric No.: _____

Supervisor: _____

Rubrics for CG4001 FA (Supervisor)

For the tables below, please tick the relevant button (either "+" or "-" for the chosen level of achievement) for each column. For the chosen level of achievement, tick the "+" button if you feel that the student is above the level of indicated achievement and the "-" button if the student meets, or is slightly below, the indicated achievement level.

Note: Tick achievement level 5+ only if you can fully justify (reasons to be provided) that the student deserves full marks for the particular criterion assessed.

Table 1a: Technical Achievement: Problem Formulation, Methodology, Implementation, Analysis and Validation

Levels of Achievement	Problem Formulation (10%)	Methodology, Implementation, Analysis and Validation (20%)
1	<ul style="list-style-type: none"> Incomplete thesis submitted. - <input type="radio"/> Fails to provide adequate context, rationale, or purpose of thesis. + <input type="radio"/> 	<ul style="list-style-type: none"> No appropriate research or investigative method/design. - <input type="radio"/> No clear specification of the problem and inadequate or trivial implementation. + <input type="radio"/> Inadequate use of problem solving skills. No analysis of the result.
2	<ul style="list-style-type: none"> Poor statement of context supporting rationale for proposed thesis. - <input type="radio"/> Poor statement of research question, design decision, hypothesis, significance, and limitations. + <input type="radio"/> 	<ul style="list-style-type: none"> Problem not fully researched or investigated; appropriateness of research/design or investigative method is questionable. - <input type="radio"/> Limited implementation of initial specification. + <input type="radio"/> Limited use of problem skills. Assumptions are stated but none are justified; Limited analysis of the results.
3	<ul style="list-style-type: none"> Adequate statement of context supporting rationale for proposed thesis. - <input type="radio"/> Adequate statement of research questions, design decision, hypothesis, significance, and limitations. + <input type="radio"/> 	<ul style="list-style-type: none"> The research/design method is somewhat adequate. - <input type="radio"/> Partial in-depth specification and implementation. + <input type="radio"/> Some steps used in solving the problem are not supported by calculations or reasoning. Assumptions are stated but some are not justified.
4	<ul style="list-style-type: none"> Provides clear context supporting rationale for proposed thesis. - <input type="radio"/> Clear statement of research questions, design decision, hypothesis, significance, and limitations. + <input type="radio"/> 	<ul style="list-style-type: none"> The research/design method is adequate. - <input type="radio"/> Sufficient in-depth specification and implementation. + <input type="radio"/> Most steps used in solving the problem are supported by calculations or reasoning. Most assumptions are stated and justified.
5	<ul style="list-style-type: none"> Provides clear context supporting rationale for proposed thesis and strong motivation for work. - <input type="radio"/> Research questions, design decision, hypothesis, significance, and limitations clearly explain and well-motivated. + <input type="radio"/> 	<ul style="list-style-type: none"> Disciplined, well thought out investigation/design method; justification for research/design method used. - <input type="radio"/> Fully developed specification and supporting implementation. + <input type="radio"/> Problem solving skills is evident. Results are analysed and well interpreted.

Table 1b: Technical Achievement: Extension of Knowledge/Overall Outcome

Levels of Achievement	Extension of Knowledge/Overall Outcome (20%)
1	<ul style="list-style-type: none"> • Basic concepts not applied correctly. - ○ • No evidence of independent learning. + ○
2	<ul style="list-style-type: none"> • Some basic concepts used; no new idea introduced. - ○ • Some Innovative work initiated, but of minimal importance. + ○ • Minimum demonstration of independent learning.
3	<ul style="list-style-type: none"> • Basic concepts used. - ○ • Some new concepts introduced but not well developed. + ○ • Some Innovative work initiated. • Some demonstration of independent work.
4	<ul style="list-style-type: none"> • Basic concepts used and some new concepts applied. - ○ • Innovative work initiated but needs more work. + ○ • Demonstrate sufficient ability to perform independent work.
5	<ul style="list-style-type: none"> • Basic and new concepts frequently used. - ○ • Promising innovative work initiated. + ○ • Demonstrate strong capability to perform independent work.

Table 2: Project Management and Planning

Levels of Achievement	Project Management and Planning (10%)
1	<ul style="list-style-type: none"> • Shows little interest and no planning for the project. - ○ • Project timeline and milestones are non-existence. + ○ • Risk identification and assessment are non-existent.
2	<ul style="list-style-type: none"> • Attempt to set some simple targets but no/minimum follow-up. - ○ • Simplistic and/or non-realistic risk identification and assessment. + ○
3	<ul style="list-style-type: none"> • Able to provide some plans for implementation. - ○ • Has provided some project timeline and milestones. However, insufficient monitoring or follow up subsequently. + ○ • Some attempt in risk assessment with some risk drivers identified, but no real effort to prioritize or manage the identified risk factors.
4	<ul style="list-style-type: none"> • Has provided complete and comprehensive project timeline based on milestones and analysis, but lacked regular monitoring and updating of progress. - ○ • Able to propose some plans to move forward to achieve the goals of the project. + ○ • Has carried out the risk assessment and management process reasonably well and documented the findings.
5	<ul style="list-style-type: none"> • Provides complete and comprehensive project timeline based on milestones and analysis, with regular monitoring and updating of progress. - ○ • Processes/steps in the plan are well articulated and are relevant to the identified goals, with viable timelines and milestones indicated. + ○ • Correctly analyses and determines the risks to be managed with complete and comprehensive management and contingency plan.

Table 3: Report: Organization, Writing Style & Clarity

Levels of Achievement	Organization (20%)	Writing Style, Clarity (20%)
1	<ul style="list-style-type: none"> • Incomplete thesis submitted. - ○ • Considerable amount of material are irrelevant, misplaced or not documented. + ○ • Disorganized to the extent of preventing understanding. 	<ul style="list-style-type: none"> • Frequent spelling and grammatical errors. - ○ • Writing is disorganized and difficult to read and understand. + ○ • Poor use of proper grammar and spelling.
2	<ul style="list-style-type: none"> • Poor organization of thesis; chapters not clearly linked. - ○ • Sources not cited and referenced in text. + ○ • All figures/tables not referenced in text; axes not labeled. 	<ul style="list-style-type: none"> • Writing does not flow well, is neither clear nor concise. - ○ • Readable writing style, but difficult to follow. + ○ • Work presented is either trivial or not used in the work performed.
3	<ul style="list-style-type: none"> • Some organization of thesis is evident but chapters are not well linked. - ○ • Most sources are cited and referenced in text. + ○ • Figures/tables relevant but not all are referenced in text. • Not all figures are clearly annotated. 	<ul style="list-style-type: none"> • Report is readable, but requires some effort. - ○ • Grammar and sentence structure adequate. + ○ • Contains relevant materials though more material can be included.
4	<ul style="list-style-type: none"> • Chapters are well linked but thesis can be more concise. - ○ • Sources are cited and referenced in text. + ○ • Provides good figures/tables, all referenced in text. 	<ul style="list-style-type: none"> • Uses proper grammar and sentence structure. - ○ • A few spelling and grammatical errors. + ○ • Writing style indicates planning that makes reading easy. • Content is sufficient and largely relevant.
5	<ul style="list-style-type: none"> • Chapters are appropriate and well linked. - ○ • Good use of tables and figures. + ○ • Information appropriately placed in either the main text or appendices. 	<ul style="list-style-type: none"> • Spell-checked and proofread well. - ○ • Writing style indicates planning that makes reading easy and flow of material. + ○ • Exemplary writing that flows well, clear, concise, and comprehensive. • Work presented is entirely relevant to the work performed.

If you have ticked achievement level 5+ for any of the assessed criteria above, please provide reasons to justify your assessment:

In order to secure Engineering Accreditation Board (EAB) accreditation, we need to demonstrate to EAB that complex engineering problem is an integral part of the CEG curricula. We also need to provide quantitative measurements for the same. It is in this regard that we seek your participation.

Please tick the appropriate level of Complex Problems characteristics that the project has.

Complex Problems – Complex engineering problems cannot be resolved without in-depth engineering knowledge and have some or all of the following characteristics:

i. Involve wide-ranging or conflicting technical, engineering and other issues	None	Partial	Full
ii. Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models	None	Partial	Full
iii. Require research-based knowledge much of which is at, or informed by, the forefront of the professional discipline and which allows a fundamentals-based, first principles analytical approach	None	Partial	Full
iv. Involve infrequently encountered issues	None	Partial	Full
v. Are outside problems encompassed by standards and codes of practice for professional engineering	None	Partial	Full
vi. Involve diverse groups of stakeholders with widely varying needs	None	Partial	Full
vii. Have significant consequences in a range of contexts	None	Partial	Full
viii. Are high level problems including many component parts or sub-problems	None	Partial	Full

Using 250 characters or more, describe how this FYP meets one or more Complex Engineering Problem characteristic(s).

Qualitative Feedback (Will be sent to the student via email once submitted)

Signature of Supervisor: _____

Date: _____

Name of Supervisor: _____