

Final report

Introduction to the report

The Final Report is one of the project's most important components. It is worth 25% of the final grade.

In it, you will explain what the group has done, why you have done it, and how well it solves the problem you intended to solve.

It is a group report, and each group will produce only one report. Yet, this assessment's marking scheme is similar to the ENGR489 marking scheme.

The main requirements of the report

The following points clarify the main requirements of the Final Report:

- The report should be written using the IEEE two-column conference format provided (available for LaTeX and MS Word). Do not change any of the font settings.
- The report is expected to contain no more than 14 pages inclusive (i.e. main text and references all count in the page limit).
 - A separate appendix document, which may reference your approved University online repository, may also be submitted but will not receive additional marks.
 - Reports which are longer than this will need to be justified by the course coordinator or risk being penalised for excessive length.
- The report should be written in such a way that any 3rd and 4th year student in your specialisation can understand it.
 - Do not assume that the reader knows anything about the particular problem.
- Material from the preliminary report and/or other submitted ENGR302 work may be used directly in the final report.

Suggested Organisation

- **Introduction:** The purpose of this section is to introduce the problem being solved, to motivate why it is a problem one should care about, to outline the solution developed during the project, and to highlight the key findings from the evaluation.
 - Remember: the introduction is the first part of the report an examiner will read. If they finish reading it without a proper understanding of the problem being solved or what has been done, then they will almost certainly struggle with understanding the remainder. You should attempt to make the project goals and associated specifications as clear and as quantifiable as possible. These goals and specifications should inform everything else that follows, so it is important to establish them in the examiner's mind.
- **Related Work:** This section should provide a comprehensive overview of existing research and literature relevant to the topic, demonstrating your understanding of the field.
 - Remember: A good related work section does not just provide a list of previous works, accompanied with short summaries. It should critically analyse and compare existing approaches, highlighting their strengths, weaknesses, and gaps in knowledge. Additionally, it should establish the novelty and significance of your work by clearly identifying how it extends or addresses the limitations of previous studies.
- **Design:** The aim of this section is to articulate the technical solution with sufficient detail and clarity. When solving a complex problem, there are normally many different approaches one can take — each with its own advantages and disadvantages. It is expected that groups will initially consider a range of different solutions and narrow these down. The reasons why a particular approach was discounted should be documented here.
 - Remember: appropriate design notation (e.g. UML diagrams) can be very helpful in conveying different aspects of a design.
 - It is vital that your design not be carried out in a vacuum. Your design should be motivated very clearly by your goals and specifications (i.e. requirements and constraints). Make sure that it is clear why you took the decisions that you did. Do not give the impression that you settled on a design because it “felt right” or that you tinkered around until you found something that worked. We also want to see evidence that you have used appropriate engineering, scientific and mathematical principles to make design decisions.
 - The design (and other aspects of the report) should also include consideration of real-world issues (economic, social and/or environmental) around implementation and delivery such as sustainability, safety, ethics and so on.
- **Implementation:** The purpose of this section is for you to discuss how you transformed the technical solution (the design) to its realisation (the artifact). Similar to the Design section, you must provide clear and sufficient descriptions.
 - Remember: we want to see clear evidence that your implementation follows the design.
 - What is the key difference between this section and Design?
 - Here, you should state the actual “components” you used. For example, if you stated that your solution would use a relational database, you should state here what database implementation you actually used (e.g. MySQL, PostgreSQL, or MSSQL) and why you chose that particular database.
 - Another example: suppose you stated in the design that your solution would use a light sensor. Here, you should state what type of light sensor you actually used (e.g. photoresistor, photodiode, or phototransistor) and why.
 - The section should include detailed technical drawings or diagrams showing the actual “components” you used. Additionally, it should discuss the justification and rationale behind implementation choices, such as material/part/component selection, manufacturing processes, or system configurations, while considering factors such as cost, feasibility, and sustainability.

- **Evaluation:** The purpose of the evaluation section is to demonstrate whether you did or did not satisfy the project goals or specifications. If you can tie the performance of your design to some real specification then your evaluation is much stronger. “My code runs in 29 ms” is much weaker than “my code runs within the 30 ms window allowable for real-time performance of the. . . ”.
 - In many cases, project evaluation requires significant extra work to design and build test harnesses. These should be explained so that the validity and scope of the evaluation can be understood. Make liberal use of graphs and other figures. They are much more effective than words at communicating many results.
- **Conclusions and Future Work:** Future work should not just be a list of things that you would have done if you had a little more time. Talk about new things that are possible now that you have finished your project. What projects could a '489 student tackle next year if they started on their '489 project next year from your end point? HINT: This might be a possibility!
- **References:** Referencing and citation are important to avoid plagiarism. You must follow an appropriate citation format (e.g. IEEE, Chicago, APA, etc.)
 - For more information about referencing and citing, please consult this library page: https://libguides.victoria.ac.nz/referencing-citing_ ([https://libguides.victoria.ac.nz/referencing-citing.\)](https://libguides.victoria.ac.nz/referencing-citing.)

Deadline

The deadline is end-of-day on the 13/10/2024

Marking Scheme with indicators

Introduction (5%)	Excellent [4-5]	Good [3]	Satisfactory [2.5]	Unsatisfactory [0-2]
Clarity of purpose	<ul style="list-style-type: none">• Motivation for pursuing the project and its relevance is clearly established by providing insightful background information that illuminates the “big picture” and relevance of the project.• Discussion on the possible overlap of the project with the sustainability goals related to People, Prosperity, and Planet. Either by clearly identifying how they are partly or wholly supported, or convincingly arguing why they are not relevant in this project.	<ul style="list-style-type: none">• Motivation for pursuing the project and its relevance is established by providing relevant background the information which partially helps clarify the “big picture” and relevance of the project.• Good discussion on the possible overlap of the project with sustainability goals. Either by clearly identifying how they are partly or wholly supported, or arguing why they are not relevant in this project.	<ul style="list-style-type: none">• Motivation for pursuing the project is partially established by providing relevant background information but their link to the “big picture” and relevance is unclear.• Acceptable discussion on the possible overlap of the project with sustainability goals or reasons on why they are not relevant in this project.	<ul style="list-style-type: none">• Non-existent, incoherent, or irrelevant motivation.• Non-existent, incoherent, or irrelevant discussion on how the project overlaps with the sustainability goals.
Literature Review	<ul style="list-style-type: none">• State-of-the-art and existing solutions to the problem, including their advantages and disadvantages, have been stated.• The proposed solution is clearly differentiated from existing solutions, highlighting the novel aspects of the former.	<ul style="list-style-type: none">• State-of-the-art and existing solutions to the problem have been stated. Their advantages and disadvantages are sometimes mentioned.• The proposed solution is differentiated from existing solutions. The novel aspects of the former are apparent.	<ul style="list-style-type: none">• State-of-the-art and existing solutions to the problem have been stated. Not much discussion on their advantages and disadvantages.• The proposed solution is compared with existing solutions, but its novelty is either unclear or not stated at all.	<ul style="list-style-type: none">• Non-existent, incoherent, or irrelevant discussion of the state-of-the-art and existing work.• Non-existent, incoherent, irrelevant, or limited discussion of the novelty of the proposed solution.
Tools and Methodology	<ul style="list-style-type: none">• Discusses the relevant programming languages, hardware and/or software libraries, frameworks, development kits and tools that have been	<ul style="list-style-type: none">• Discusses the relevant programming languages, hardware and/or software libraries, frameworks, development kits and tools that have been	<ul style="list-style-type: none">• Discusses the programming languages, hardware and/or software libraries, frameworks, development kits and tools that have been	<ul style="list-style-type: none">• Non-existent, incoherent, or limited discussion of the tools used in the development process.• Non-existent, incoherent, or limited

	used in the development, with critical discussion on how these tools benefitted the design.	used in the development with somewhat relevant discussion on how these tools benefitted the design.	used in the development with weak discussion on how these tools benefitted the design.	discussion on how these tools benefited the design. Justifications, if any, are questionable.
Design and Implementation (6%)	Excellent [5-6]	Good [4]	Satisfactory [3]	Unsatisfactory [0-2]
Conceptual Design	<ul style="list-style-type: none">Thorough explanation of the system architecture, along with its components and interfaces with external systems.Requirements and constraints are appropriately considered to drive design choices.	<ul style="list-style-type: none">Adequate explanation of the system architecture, along with its components and interfaces with external systems.Requirements and constraints are appropriately considered to drive design choices most of the time.	<ul style="list-style-type: none">The system architecture, along with its components and interfaces with external systems are explained but some key details are missing.Some of the design choices are driven by requirements and constraints.	<ul style="list-style-type: none">Non-existent, vague, or irrelevant discussion of the system architecture.Non-existent or weak evidence that the design choices are driven by requirements and constraints
Implementation	<ul style="list-style-type: none">Implementation description is complete and consistent with the design. All key components completed.Validated against group demonstration	<ul style="list-style-type: none">Implementation description misses minor components but is consistent with design and adequately explained. Most of the key components completed.Validated against group demonstration	<ul style="list-style-type: none">Provides a list of some performance metrics, though not complete, that have been used to evaluate the solution without adequately relating them with their significance.Validated against group demonstration	<ul style="list-style-type: none">Implementation description is either non-existent, mostly incomplete or incongruent with the design. Limited to no component completed.Validated against group demonstration
Evaluation (6%)	Excellent [5-6]	Good [4]	Satisfactory [3]	Unsatisfactory [0-2]
Performance metrics	<ul style="list-style-type: none">Provides a comprehensive list of performance metrics that have been used to evaluate the solution along with their significance in evaluation.	<ul style="list-style-type: none">Provides a mostly complete list of performance metrics that have been used to evaluate the solution along with their significance in evaluation.	<ul style="list-style-type: none">Provides a list of some performance metrics, though not complete, that have been used to evaluate the solution without adequately relating them with their significance.	<ul style="list-style-type: none">There is little or no information about performance metrics.
Results	<ul style="list-style-type: none">Thorough description of empirical/analytical results that assess the solution from all the technical perspectives.	<ul style="list-style-type: none">Good description of empirical/analytical results that assesses the solution from multiple technical perspectives.	<ul style="list-style-type: none">Description of empirical/analytical results that assess the solution from a few technical perspectives.	<ul style="list-style-type: none">Either little or no discussion on empirical/analytical results that assess the solution.
Limitations	<ul style="list-style-type: none">Appreciation of limitations of the artefact developed; consideration of how the artefact could be further improved.	<ul style="list-style-type: none">Understanding of the limitations of the artefact developed. Some discussion on the room for improvement.	<ul style="list-style-type: none">Some discussion on the limitations and room for improvement.	<ul style="list-style-type: none">Either little or no discussion on limitations or room for improvement.
Critical Thinking (4%)	Excellent [4]	Good [3]	Satisfactory [2]	Unsatisfactory [0-1]
Critical thinking – technical aspects	<ul style="list-style-type: none">A comprehensive analysis, design and evaluation which shows an understanding of the technical issues from	<ul style="list-style-type: none">A strong analysis, design and evaluation which shows an understanding of the technical issues from	<ul style="list-style-type: none">Exhibits a basic grasp of the technical issues from a few important perspectives	<ul style="list-style-type: none">Either little or no evidence of analysis, evaluation or the formation of judgements, or there are

15/07/2024, 11:55

Final report: 24.2.ENGR302: Engineering Project Management 2

	different perspectives: design choices, tools and methodology, limitations and room for improvement.	different perspectives: design choices, tools and methodology, limitations with a basic understanding of room for improvement.		major errors or deficiencies in the analysis of, or reasoning about, the technical aspects of the project.
Written Communication (4%)	Excellent [4]	Good [3]	Satisfactory [2]	Unsatisfactory [0-1]
Writing Skills	<ul style="list-style-type: none"> No spelling errors, no discernible flaws in punctuation, grammar, and sentence construction. Sophisticated use of vocabulary, choice of words and discipline-specific terminology. Elegant and thoughtful sentence and paragraph construction, which enhances the reader's understanding. 	<ul style="list-style-type: none"> Very few spelling errors, correct punctuation, grammatically correct, complete sentences. Consistently appropriate vocabulary, consistently correct word choice and discipline-specific terminology. Variety of sentence construction; logical flow; style and structure appropriate for task, audience and genre. 	<ul style="list-style-type: none"> Lapses in spelling, punctuation and grammar, but not enough to seriously distract the reader. Generally appropriate vocabulary; not overly repetitive. Generally, chooses correct words and terminology. Not overly repetitive; some variety in sentence construction; generally, flows well; some awareness of audience and genre. 	<ul style="list-style-type: none"> Numerous spelling errors, absent or incorrect punctuation, and/or severe grammatical errors. Excessively limited, inappropriate or repetitive vocabulary. Misuses words and discipline-specific terminology. Repetitive and/or simplistic sentence structure; consistently disjointed, lack of flow; style/structure inappropriate for audience.
Clarity and Conciseness	<ul style="list-style-type: none"> Displays clarity of thought through a cogent argument focused on the question, enlightening the reader. 	<ul style="list-style-type: none"> Argument is effectively conveyed, addressing the question in an easily understood manner. 	<ul style="list-style-type: none"> Argument reasonably clear; occasionally misses the point but answers the question; not excessively elaborate or complicated. 	<ul style="list-style-type: none"> Main point and/or argument confused or unclear. Irrelevant information, no transition between ideas. Unclear conclusion.
Completeness	<ul style="list-style-type: none"> Report is presented as one whole. There is no evidence that it has been written by several individuals. 	<ul style="list-style-type: none"> Report is mostly presented as one whole. There is only few evidences that it has been written by several individuals. 	<ul style="list-style-type: none"> There is clear evidence that it has been written by several individuals. Report still makes sense, and does not have clear contradictions. 	<ul style="list-style-type: none"> The report have contractions that results in an unclear message.
Academic Integrity and Appropriate Use of Referencing	<ul style="list-style-type: none"> Sources and citations are carefully chosen to concisely support the work, and the mandated referencing system is used skillfully and effectively. 	<ul style="list-style-type: none"> Others' work acknowledged in-text and/or with citations. Uses the mandated referencing system consistently and correctly. 	<ul style="list-style-type: none"> Other sources appear to be acknowledged. Uses the mandated referencing system but with occasional errors or omissions. 	<ul style="list-style-type: none"> Work appears to be not adequately referenced or attributed. Does not attempt to use the mandated referencing system.

