SYDE462 - Final Outcomes Conference Paper

20% of course grade -Team submission

Due Date: Friday, March 24th, 2023 by 8:00pm ET on LEARN as a single PDF document.

NOTE: The headings, section content, and general formatting style provided below must be used for the Final Project Outcomes Conference Paper. Do not assume the reader has any prior knowledge of the project – some Panel Examiners may be seeing this project for the first time, so clearly and succinctly describe all aspects of the project. Feel free to use elements from previous deliverables in SYDE 461/462, modifying as appropriate for smooth integration into this document. Remember to include appropriate figures, images, and charts/graphs to help convey the design concepts, methods, and project outcomes.

10-12 pages maximum + references. No appendices.

Formatting:

- Title - Bold, 16pt.
- Team Info - Italics, 12pt.
- Section Header - Bold, 14pt, All Caps.
- Sub Section Header - Bold, Italics, 12pt, All Caps.
- Body Text - 12pt.
- Paragraphs not indented, hard return after paragraph.
- Fully justified.
- Two hard returns after sections.
- No serif fonts. Use IBM Plex Sans, Helvetica, or similar, please.

SYDE 462 - Project Title

Team #: Team member 1, Team member 2, Team member 3, Team member 4

Abstract – The Abstract should be a 150-200 word succinct summary of your project and its outcomes. Document margins are set at 1 inch. Text should be fully justified. The maximum page allowance is 10-12 pages.

Keywords – Provide three key words, or key phrases, that best describe your project area.

INTRODUCTION

Introduce the problem space, situation of concern, key actors/users, and any other required general background information.

PROJECT SCOPE AND OBJECTIVES

Briefly inform the reader of the specific project motivation, scope, and objectives. Provide more detail on your problem and the aspects of it your solution has addressed.

SUMMARY OF ENGINEERING ANALYSIS AND DESIGN METHODS

Outline the main approaches used by the team to arrive at the final design solution. This section may be drawn from your SYDE 461 Project Analysis Paper, with relevant updates. Depending on the nature of the project, the team may use sub-sections titled to reflect the main system components.

SUMMARY OF SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS

Discuss the social, economic, and environmental impacts of your design. How were these factors considered in your design process? How did you meet your obligation to the safeguarding of life, health, property, economic interests, the public welfare, and the environment.

DESIGNED SOLUTION

Describe the final designed solution that was actually implemented at a suitable level for testing and demonstration. Be clear as to which components were “off-the-shelf” and which components were designed or modified by the team to fit the project. Clearly describe any modifications that were needed to integrate off-the-shelf components into your project. Include figures and images as appropriate.

SUMMARY OF DESIGN EVALUATION

Outline the main testing protocols and results conducted out by the team to verify and validate the designed solution. Depending on the nature of the project, the team may use sub-sections titled to reflect the main system components. Clarify for the reader whether the design and testing followed an iterative approach or a waterfall approach. This section should clearly indicate whether the designed solution met the project objectives based on the design evaluation results. Be honest in your reporting. If some of the objectives were not clearly met, then the team’s recommendation for future design verification or validation steps should be covered in the next section on Limitations (Section V).

NOTE: The expectation for this deliverable is that teams will honestly report project outcomes.

- If your team did not get as far as expected with the design, be honest.
- If your team’s analysis, design, or verification and validation activities did not go as expected, be honest.
- If your team was unable to do the intended design evaluation activities prior to the report submission, but is able to complete some/all activities before the Panel Exam, then you may report on those updates during your presentation.

Under Policy 71, if a team submits a report that contains fraudulent information (including reports of analysis, design or test activities that have not been carried out, or data falsely generated) then the course instructor will have no option but to treat it as an academic offence. Investigation applies to all team members, as the team collectively submits the document. The same applies if fraudulent reporting is uncovered as part of the questioning during the Panel Exam. Honesty is part of professional practice. It is not uncommon to have to explain and own up to why a project has not proceeded as planned. Being accountable and responsible for (team) decisions are part of professional practice too.

LIMITATIONS OF DESIGNED SOLUTION

All design solutions have limitations. Outline the main limitations of your designed solution as it was implemented by the team. Include a brief discussion of other longer-term design impacts that should be acknowledged, but were outside the scope of this project. Note that recommendations for addressing project limitations should be included in the section on Conclusions and Recommendations.

CONCLUSIONS AND RECOMMENDATIONS

Briefly state your main conclusions at this point in the project. Please also include whether or not the project outcomes were met. Identify reasonable next steps if another group were to take over the project in the future.

ACKNOWLEDGMENTS

This section should acknowledge any help and support that the team has received from supervisors, advisors, and industry partners.

REFERENCES

Teams are expected to consistently use an appropriate academic referencing style, as outlined in the SYDE Style Guide. You may use either an ordinal citation format (e.g. [1]), or a citation format (e.g. Heppler, 2011). IEEE format is required. As senior undergraduate students, the expectation is that you will be able to research and cite appropriate academic journals and peer-reviewed sources rather than deferring only to websites.

EXAMPLES

[1] G. R. Heppler, “Systems Design Engineering Technical Report Style Manual, Fifth Edition”, SYDE 000. University of Waterloo, 2009.

RUBRIC FOR FINAL PROJECT OUTCOMES CONFERENCE PAPER

For each component, evaluators will consider the engineering content as well as the technical writing. Engineering content will be evaluated first.

Missing components = 0
U = Unsatisfactory (clearly below standard for a 4th year level SYDE student)
M = Marginal (meets minimum expectations)
S = Satisfactory (demonstrates basic competence for the project undertaken)
G = Very Good (good demonstration of engineering knowledge and design skills)
E = Excellent (excellent work, above average design skills and real insight into the problem)
O = Outstanding (showcase worthy work, well above expectations)

Evaluators can assign intermediary numeric grades (i.e. you can get a 4 or a 9).

Components	**U**	**M**	**S**	**G**	**E**	**O**	**Score**
Abstract	0	1		2		3	/3
Introduction	1	2,5	3	3,5	4	5	/5
Scope and Objectives	1	2,5	3	3,5	4	5	/5
Engineering Analysis and Design Methods	3	6	7,5	9	10	12	/12
Social, Economic, and Environmental Impacts	2	5	6,5	7,5	8,5	10	/10
Designed Solution	2	5	6,5	7,5	8,5	10	/10
Design Evaluation	3	7,5	9	11,5	13	15	/15
Limitations	2	5	6,5	7,5	8,5	10	/10
Conclusions and Recommendations	2	5	6,5	7,5	8,5	10	/10
References	2	5	6,5	7,5	8,5	10	/10
Overall Quality of Technical Writing	2	5	6,5	7,5	8,5	10	/10
						TOTAL	/100

Comments: