School of Public Administration

Bachelor of Science in Computing

Student Handbook

for

COMP491/492 Final Year Project

Academic Year 2016/17

Version 1.2

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1 Goal of Final Year Project

The final year project (FYP) aims to allow students to tackle a real problem and to complete the specification / design / implementation / documentation / testing / evaluation processes. Students are required to develop software projects and / or carry out research project in areas relevant to your degree programme. The FYP is an individual yearly project. Students are required to explore an area of information technologies in considerable depth, demonstrating sound problem solving and analytical skills.

2 Project Allocation

Students may propose their own project topics, or choose from a list of topics provided by the project supervisor team, available prior to the start of the first semester. A panel from the supervisor team will approve both types of proposed project titles. Approval of a proposed topic depends on how well the topic can be developed to reach a satisfactory level. The allocation of the project is based on a first come first serve scheme. Each student is assigned one supervisor, one assessor and a presentation panel. The supervisor, the assessor and the presentation panel will grade the project, but with different weighting. The detail is given in Section 4.

2.1 Student's Responsibilities

The responsibilities of the student may be summarized as follows:

- To define the project objectives and the possible outcomes;
- To monitor their project progress;
- To maintain regular contact and arrange appointments with the supervisor;
- To pick up the needed knowledge, and deal with implementation details;
- To formulate specific problems before asking the supervisor;
- To be self-motivated;
- To report immediately to the supervisor any equipment failure and other difficulties that would interrupt their work.

2.2 Supervisor's Responsibilities

The supervisor's responsibilities may be summarized as follows:

- To provide a list of project titles for selection
- To provide advice and guidance to the student on the project.
- To explain what resources (hardware and software) are available to the students.
- To explain the project assessment method to the students.
- To be available to the student for consultation.
- To evaluate the student's project in terms of quality and quantity.

2.3 Assessor's and Presentation Panel's Responsibilities

The assessor's responsibilities may be summarized as follows:

- To assess students' progress report and final report. [Assessor]
- To assess students' presentation and poster session. [Presentation Panel]

Note that the presentation panel consists of the Assessor and one other member of the supervisor team.

3 Project Work

You (the student) have to undertake a series of tasks in this final year project course in order to reach a satisfactory conclusion.

3.1 Project Implementation

First and foremost, the project has to be completely implemented. The exact tasks to be completed vary from project to project. To finish the project on time, students are advised to prepare their own schedules to monitor their progress.

3.2 Project Management

You are required to carry out correct project management. This includes proper planning using a Gantt chart, weekly status reports and progress checks against the Gantt chart. Your supervisor will use these documents to check your progress and evaluate your project management skills. Detailed requirements are described below.

3.2.1 Project Proposal

By the end of Week 3 of the first semester, you have to submit a **Project Proposal**. This document defines the scope of your project by setting the objectives and expected outcome. It also explains the relevance of the project, highlights major challenges, and describes potential risks and their mitigation. In addition, it includes a tentative schedule for the main tasks in the project. The Project Proposal should follow the standard format in the official Project Proposal template.

3.2.2 Weekly Status Report

Starting from Week 4 of the first semester, you have to submit weekly updates on your progress in a **Weekly Status Report**. You have to briefly report what tasks you have accomplished and your plan for the coming weeks in the report. This helps your supervisor to monitor your progress. The Weekly Status Report should follow the standard format in the official Weekly Status Report template.

You have to send updates on weekly status at the end of each week of the yearly project (Week 4-14 of the first semester, Week 1-13 of the second semester). In the report, list the tasks you finished in the week, and the tasks you plan to do in the next week. In Week 6 of the first semester, you have to attach the first version of the Gantt chart in the weekly report. The Gantt chart sets up the overall schedule for the whole project. Therefore, from Week 7 of the first semester onwards, you also need to check your progress against the Gantt chart.

You may revise the schedule in the Gantt chart during the course of the project. This is necessary, for example, in case of risk mitigation. You must include the updated Gantt chart in the Weekly Status Report, and explain the reasons for schedule revision. You should also adopt a sound method of version control to avoid potential confusion regarding which version is currently being used.

3.2.3 Work Book

In addition, you also need to keep a project **Work Book** to record important discussions with supervisors, consideration and decision processes within project design and implementation, difficulties encountered and solution / work-around taken. This information is critical when you write your project report, since the process is as important as the result in this yearly project, and you must describe your development methods in the Final Report.

3.3 Progress Report and Presentation

At the end of the first semester, you have to hand in a Progress Report and give a Progress Presentation.

The Progress Report is an important milestone in the yearly project. It consolidates your accomplishment in the first half of the project, and lays out the plan to complete the project in the second half. Moreover, your supervisor can give early feedback to formatting and writing style in the report. The Progress Report should conform to the official FYP Progress Report template. Refer to Appendix A for an overview of the content of the Progress Report.

In the Progress Presentation, you have to present your work with a slide show to the presentation panel. The purposes of the presentation are twofold. First, you can gain

presentation experience, which is helpful to your final presentation/poster session in the second semester. Second, you can also receive early comment on your presentation skills.

3.4 Final Report

The Final Report is the main deliverable of the yearly project, due at the end of the second semester. It defines the project problem in context of related works, provides details of the methods used to solve the problem / develop a solution, describes the project outcome in detail, gives evidence that it achieves the objectives / solves the problem, and discusses its significance. The Final Report should conform to the official FYP Final Report template. Refer to Appendix B for an overview of the content of the Final Report.

The precise content of your final report will depend on the nature of the project. For example, a software oriented project may require extensive explanation of the user interface, and screen captures, whereas a research oriented project may present the methodology and performance evaluation. What should be included in the report should be discussed between you and your supervisor.

Before the submission of the finalized version of the report, in the Week 8 in the second semester, you have to submit a draft of the Final Report. This draft should have complete content in Chapter 1 and 2. You should also finish at least half of Chapters 3, 4 and 5. (Usually, either the design and implementation, or the results and discussion.) For incomplete chapters, there must be at least a writing plan that delineates the content to be included in the final version. In other words, this draft report should provide a clear picture of overall structure and logic flow of the Final Report.

The supervisor will comment on the overall structure of the draft report and, if necessary, suggest missing information in the report. Fixing the overall structure early is also important because you have to complete and submit the poster in Week 10.

3.5 Final Presentation

At the end of the second semester, you have to present your work in two activities, namely oral presentation and poster session.

3.5.1 Oral Presentation

Oral presentations are considered an important part of the final year project assessment. A good presentation does not only require proficiency in spoken English but also the ability to transfer information in a manner that is interesting, informative and accurate.

In the oral presentation, you have to present your work in this yearly project with a slide show to the presentation panel. You must present and discuss the major results in this project. One purpose of oral presentation is to verify whether the project work is done by you. In the Q/A session, you will need to answer questions within a time limit. You may fail the course if you cannot show that you understand the details of your project.

You may choose to demonstrate your project during the final presentation. The purpose of the project demonstration is to provide you with the chance to present a live demonstration to your supervisor and assessor, so that the work can be better evaluated. You may discuss with your supervisor and assessor on the arrangement of the demonstration.

3.5.2 Poster Session

In the poster session, you have to present your work in a poster and hold discussions with attendees who are interested in your project. Second year and third year students and other teachers from the Computing Program are invited to participate in the poster session. You are required to attend this event to answer any questions that the poster might raise.

3.6 Schedule

The course of Final Year Project involves a number of activities and deadlines. The general schedule is shown in Table 1 Project Schedule.

Table 1 Project Schedule

Week	Event
Semester 1	
1	Project allocation
3	Project Proposal submission
4	Supervisors return comments on Proposal
4–14	Weekly updates in Weekly Status Report
6	Gantt chart submission
12	Progress Report submission
13	Progress Presentation
15	Supervisors and assessors return comments on Progress Report
Semester 2	
1–13	Weekly updates in Weekly Status Report
6	Implementation mostly done. Focus on report writing hereafter.
8	Final Report draft submission
9	Supervisors return comments on Final Report draft
10	Poster submission
13	Final Presentation, Poster session Final Report submission

4 Assessment

The final mark for a project consists of partial marks from various activities in this yearly project course. The following is the mark distribution of major activities in the two semesters.

- First semester (Total 18%)
    - Continuous assessment: motivation and self-study – 6%
    - Progress report – 10%
    - Progress presentation – 4%
- Second semester (Total 82%)
    - Continuous assessment: motivation and self-study – 6%
    - Project management – 6%
    - Final report – 60%
    - Final presentation and poster session – 8%

4.1 Marking Criteria and Markers

Different activities of the project are assessed based on marking criteria, which are summarized in Table 2. The detailed criteria can be found in Appendix C. Students are strongly recommended to read through the details of the marking criteria very carefully.

Motivation, self-study and project management are assessed by the supervisor according to the items S1 and S2 in the marking criteria. They contribute 18% to the final mark. The supervisor grades student's performance over the two semesters separately. At the end of the first semester, S1 contributes 6%. At the end of the second semester, S1 and S2 contribute 6% individually.

The progress report describes the student's mid-year progress and the plan to complete the project. It contributes 10% to the final mark and is graded by both the supervisor and assessor at the end of the first semester according to the items R0 and R1 in the marking criteria. Each marker contributes 5%.

Table 2 Summary of Marking Criteria

Criteria	Description	Graded based on …
S1	Motivation, self-study, independent work	Meeting Log. Maintain regular contact with supervisor. Final Report Appendix B.
S2	Project management practice	Proposal, Weekly Status Report and workbook
R0	Mid-year Progress	Progress Report, Chap 3 and 4
R1	Problem formulation, background research	Chap 1 and 2 of Progress Report and Final Report
R2	Methodology: Analysis of problem and methodical design of solution	Chap 3 and 4 of Final report
R3	Outcome: Results and critical evaluation	Chap 5 and 6 of Final report
R4	Overall project quality: Amount of work, topic difficulty, innovation	Final Report
R5	Writing skills: clear expression of ideas and arguments	Final Report
R6	Report formatting and organization	Final Report
P1	Presentation content	Presentation slides, poster, demo setup
P2	Communication skills: Oral presentation and answering questions	Progress presentation, Final presentation and poster session

The Final Report represents the student's completed work and serves as the major document to grade the project. It contributes 60% to the final mark. The Final Report is assessed by both the supervisor and assessor according to the items R1, R2, R3, R4, R5 and R6 in the marking criteria. Each marker contributes 30%.

There is a Progress Presentation at the end of the first semester, which contributes 4% to the final mark. A presentation panel assesses the presentation according to the items P1 and P2 in the marking criteria.

There is a Final Presentation and a poster session at the end of the second semester. They contribute 8% to the final mark. A presentation panel assesses the Final Presentation and poster session according to the items P1 and P2 in the marking criteria.

Table 3 summarizes the various components of the final mark. The table details different marking criteria, their markers and their weights.

Table 3 Composition of Final Mark

	1st semester					2nd semester									
Marking criteria	S1	R0	R1	P1	P2	S1	S2	R1	R2	R3	R4	R5	R6	P1	P2
Supervisor [total=53%]	6	3	2			6	6	2	7	7	9	2	3		
Assessor [total=35%]		3	2					2	7	7	9	2	3		
Presentation panel [total=12%]				2	2									4	4

4.2 Plagiarism

According to the Merriam-Webster Online Dictionary, to "plagiarize" means

- to steal and pass off (the ideas or words of another) as one's own
- to use (another's production) without crediting the source
- to commit literary theft
- to present as new and original an idea or product derived from an existing source.

In other words, plagiarism is an act of fraud. It involves both stealing someone else's work and lying about it afterward. [*http://www.plagiarism.org/plag_article_what_is_plagiarism.html*]   For more details about plagiarism and how to prevent it, please refer to www.plagiarism.org.

Please note that any alleged cases of academic dishonesty[1], including plagiarism, will be reported to the School Director who shall conduct a thorough investigation. Established cases should be reported to the Pedagogical Scientific Committee (PSC) for further consideration. Any proven acts of academic dishonesty may result in dismissal from the Institute.

A zero mark will be given if you copy someone else's work or you let someone copy your work.

4.3 Implication of Project Failure

If you fail the individual project course, you have to retake it in another academic year. Since the project course is offered in year 4, failing the course will delay the award of the degree.

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[1] see *http://www.ipm.edu.mo/student/regul_examcheating.html*

Appendix A. Overview of Progress Report Content

The Progress Report is an important milestone in the yearly project. It consolidates your accomplishment in the first half of the project, and lays out the plan to complete the project in the second half. Moreover, much of the content in the Progress Report will be reused in the Final Report. The main body of the Progress Report consists of five chapters and references. The following lists some important content you should include in these chapters.

- Chapter 1. Introduction
    - Define the project with clear SMART objectives
    - Establish the relevancy of the problem, and put it in the context of related works
    - Identify the major risks and their mitigation
- Chapter 2. Background
    - Provide sufficient background knowledge that helps readers not familiar with the problem domain
    - Original, creative content should NOT be put here
    - May provide more detail of related works, but do the critical analysis of existing works in Chapter 1
- Chapter 3. Completed work
    - Describe what you have accomplished in the 1st semester
    - *Include only original, creative content.* (Long description of others' work should be moved to Chapter 2)
    - Provide detailed analysis of the problem, and if possible, a high-level design of the system
    - Highlight difficulties encountered, alternatives evaluated and solutions adopted. The design process is as important as the decisions themselves!
- Chapter 4. Future work
    - Describe partially completed work
    - Show effective project planning for the 2nd semester. Include a Gantt chart.
    - Clear idea of what to do to complete the project
- Chapter 5. Conclusion
    - Reflect on the progress of the project. Can use first person to write.

- References
  - List references to background information and related works

In addition, the Progress Report should be based on the standard template file to observe the formatting requirements. You should also update the front matter (pages before the main body), listed below.

- Cover page: fill in correct project title, project number, student and supervisor info
- Declaration of originality: add your signature
- Abstract: summary of your progress report.
- Acknowledgement
- Table of Contents
- Table of Figures
- List of Tables

Appendix B. Overview of Final Report Content

The Final Report is the main deliverable of the yearly project. It defines the project problem in context of related works, provides details of the methods used to solve the problem / develop a solution, describes the project outcome in detail, gives evidence that it achieves the objectives / solves the problem, and discusses its significance. The main body of the Final Report consists of six chapters and references. The report also has two required appendices. The following indicates key content in each chapter / appendices.

- Chapter 1. Introduction
    - Define the project with clear SMART objectives
    - Establish the relevancy of the problem, and put it in the context of related works
    - Identify the major risks and their mitigation
- Chapter 2. Background
    - Provide sufficient background knowledge that helps readers not familiar with the problem domain
    - Original, creative content should not be put here
    - May provide more detail of related works, but do the critical analysis of existing works in Chapter 1
- Chapter 3. Design Approach
    - In general, chapter 3 provides high-level description of the methods to solve the problem, whereas chapter 4 covers low-level detail.
    - The following are some typical content of these two chapters. Discuss with your supervisor on how to best organize the material in your report.
    - Provide sufficient information on how the project is accomplished. There should be enough detail for others to replicate your work.
    - Perform detailed analysis of problem and methodical design.
    - Exhibit analytical thinking. Provide arguments why you believe your approach should work. Compare alternatives in design and justify decision.
    - Highlight difficulties encountered, alternatives evaluated and solutions adopted. The design process is as important as the decisions themselves!
- Chapter 4. Implementation
    - See notes for Chapter 3
- Chapter 5. Results and Discussion

- o Describe in detail the outcome (including software, hardware, system, experiment results, etc.)
- o Use screen shots to illustrate how software interacts with users. Include testing to ensure that the implementation is working properly.
- o Experiment projects usually have statistical verification and analysis, presented in suitable charts and figures. Add insightful analysis to explain your experimental result.
- o Discuss significance of the outcome and highlight your contributions.
- o Discuss whether or not the project outcome meets the project objectives. Provide hard evidence to defend your answer.
- Chapter 6. Conclusions and Further Work
  - o Summarize the main contributions of your work, and how it fulfilled the objectives
  - o Describe how your work may contribute to existing works in the field
  - o Point out ways to extend your work, or how to overcome limitation of your work
- References
  - o List references to background information and related works
- Appendix A. Project Management
  - o Include the Gantt chart
- Appendix B. Reflection
  - o Reflect on the progress of the whole project, your approach to addressing the challenges met, and how things might have been improved given the benefit of the experience that you have now gained. You can write in first person.

In addition, the Final Report should be based on the standard template file to observe the formatting requirements. You should also update the front matter (pages before the main body), listed below.

- Cover page: fill in correct project title, project number, student and supervisor info
- Declaration of originality: add signature
- Abstract
- Acknowledgement
- Table of Contents
- Table of Figures
- List of Tables

Appendix C. Marking Criteria

Note: the mark ranges correspond to letter grade in Macao Polytechnic Institute. For example, 88-100 mark maps to A-, A or A+. 73-87 mark maps to B-, B or B+.

S1. Self-motivation and self-study

- (0-34) The student is unresponsive to supervisor and out-of-contact most of the time. Apply previously taught technique incorrectly.
- (35-49) The student is often unresponsive to supervisor, and replies too much on supervisor's push. Apply previously taught technique incorrectly.
- (50-57) Responsive to supervisor usually, but relies on supervisor's push to work in some cases. Acceptable attendance of meetings with preparation. Minimal self-study, but apply previously taught technique correctly.
- (58-72) Responsive to supervisor, but needs reminder sometimes. Attended most scheduled meetings, but sometimes lack sufficient preparation. Superficial usage of new concepts / technique, with basic understanding.
- (73-87) Self-motivated. Attended most scheduled meetings with preparation. Self-study of new concepts / technique, with good understanding.
- (88-100) Highly self-motivated. Attended all scheduled meetings with preparation. Self-study of new concepts / technique and solve technical difficulties.

S2. Project management

- (0-34) No or little evidence in project management.
- (35-49) Some evidence in project management, but fails to reach the barely acceptable standard.
- (50-57) Slow and unsteady progress with basic project outcome. Sketchy record of progress. Basic project management.
- (58-72) Slow but steady progress with basic project outcome. Adequate project management supported by suitable documents.
- (73-87) Good progress with good record keeping (e.g. workbook). Minor problems in project management. Reasonable project management documents.

- (88-100) Steady progress with good record keeping (e.g. workbook). Show evidence of good use of project management.

R0. Mid-year Progress (Progress Report and Presentation)

In the following, the term "interim product" refers to something contributes in a substantial way towards the system development, experiment, or mathematical development that the student sets out to design and produce in the project.

- (0-34) There is some sort of detectable progress, but nowhere near enough to suggest that the student is likely to be able to complete a final year project.
- (35-49) Some sort of progress has been made, but it is not commensurate with a third of an final year project. They have done some work towards understanding the problem area. The student urgently needs to get moving and is likely to need substantial input from the supervisor
- (50-57) There may not be an interim product as such, but the student has clearly made a reasonable amount of progress in some way and shown some familiarity with the project area. The project plan has some oversights, and must be revised to facilitate success of the project. The student may not fully understand what will be required to produce an acceptable final product but should get there with help from the supervisor.
- (58-72) There is a modest but promising interim product and/or some practical work which will contribute substantially towards the final product, e.g. learning to use a specialised software tool or interfacing to an external API. They have shown a clear understanding of the technical and professional issues involved and have analysed the problem area. Some issues may have been overlooked but there should be a project plan which suggests the likely success of the project. The student clearly understands what they are trying to achieve.
- (73-87) The student has already designed and developed an interim product which shows great promise. They have performed a detailed analysis of the problem area and a feasible project plan. There is also evidence of creativity, and the ability to make good design decisions.
- (88-100) The student has already designed and developed an impressive interim product. They have performed a detailed analysis of the problem area leading to initial high-level designs for the system and a detailed feasible project plan. Considerable creativity, independence, and originality, is evident.

R1. Problem formulation (Well-motivated problem in context)

- (0-34) Little or no effort demonstrated.
- (35-49) Show some, but unsatisfactory, effort in formulation and study of relevant material.
- (50-57) Acceptable definition of project and project objectives / research problem. Basic understanding of the problem, with basic knowledge of relevant material.
- (58-72) Effective definition of project. Project objectives / research problem is satisfactory, but lacks some detail in relevancy and justification. Basic understanding of the problem, but still lacks appropriate study of some relevant material.
- (73-87) Clear definition of project. Project objectives / research problem are relevant and justified. Good understanding of the problem, with study of relevant material.
- (88-100) Clear definition of project. Project objectives / research problem are well-motivated and well-defined. Thorough background research. Very good understanding of the problem and clear explanation of its relationship in the overall context.

R2. Methodology (Analysis of problem and methodical design of solution)

- (0-34) No evidence in designing how to solve the problem.
- (35-49) Show some, but unsatisfactory, effort in solving the problem.
- (50-57) Basic relevant content is covered and is enough for a basic understanding of how the project is accomplished. Acceptable analysis of problem and design or implementation.
- (58-72) Some key points are covered with detail that is enough to fully understand how the project is accomplished in some aspects. Adequate analysis of problem in some aspects only. Design is carried out in a sensible way, but design decisions mostly not justified.
- (73-87) Most major points are covered with sufficient details so that others can understand how the project is accomplished. Good analysis of problem in most aspects. Logical design process is followed, and most major design decisions are justified. Basic methodology in design of solution.
- (88-100) All major points are covered with sufficient details so that others can fully understand how the project is accomplished. Detailed analysis of problem. Logical design process. Analytical thinking in making all major design decisions, with

comparison of options and justified decision. Very good, methodical design of solution (e.g. software analysis and design, appropriate research methodology).

R3. Outcome (Results and critical evaluation)

- (0-34) Little or no evidence of results and no conclusion.
- (35-49) Some very poor results presented but no attempt to analyze them or draw any conclusions.
- (50-57) Basic relevant content is covered and is enough for a basic understanding of the outcome of the project. Elementary discussion of results, but miss discussion of importance of results. For system development project: include description of an obvious solution, sketchy functionalities.
- (58-72) Some key points are covered with detail that is enough to fully understand the outcome and value of the project in some aspects. Importance of results discussed in some aspects only. For system development projects, include description of a simple, yet mostly complete solution that solves the stated problem with a usable interface. Basic testing to ensure correct implementation in some major cases.
- (73-87) Most major points are covered with sufficient details so that others can understand the outcome and value of the project. Importance discussed and significance pointed out. For system development projects: include description of a complete solution with nontrivial functionalities. User-friendly interface with basic error checking. Robust testing to ensure correct implementation in most major cases.
- (88-100) All major points are covered with sufficient details so that others can fully understand the outcome and value of the project. Discussion of results is comprehensive and convincing with interesting implications pointed out. For system development projects, include description of a complete solution with nontrivial functionalities. User-friendly interface with production-quality error checking. Robust testing to ensure correct implementation in all major cases.

R4. Overall project quality (Amount of work, topic difficulty, original thoughts)

- (0-34) No original contribution. Lack evidence of original work.

- (35-49) Some original work, but fails to reach the barely acceptable standard.

- (50-57) Reasonable amount of straightforward work. Topic is relatively simple and requires minimal use of new concepts. The developed system provides trivial solution.

- (58-72) Reasonable amount of work, and include some difficult parts. Topic is more difficult and requires some study of new concepts. Evidence of understanding of technical issues in the design and evaluation of the solution. The developed system provides basic solution to problems. The report has a few inaccurate or irrelevant points.

- (73-87) A solid amount of work. Topic is demanding and suitable for a mature student. Study of new concepts is essential. Evidence of familiarity of technical issues and some original thoughts in the design and evaluation of the solution. The developed system provides solution to complex problems. The report has good quality, precision, and coverage.

- (88-100) A large body of intensive work. Topic is challenging and difficult. Evidence of familiarity of technical issues and many original thoughts in the design and evaluation of the solution. Innovative work with research value. The developed system provides innovative solution to complex problems. The report has excellent quality, precision, and coverage.

R5. Writing skills (Clear expression of ideas and arguments)

- (0-34) The writing is very poor and incomprehensible.

- (35-49) Frequent errors in spelling and grammar. Minimal attempt at paragraphing. Paragraphs are often strings of sentences.

- (50-57) Some errors in spelling and grammar. Topic sentences may be missing or incomplete in some cases. Paragraphs are occasionally weak or underdeveloped. Readable, but some parts are difficult to read and understand. Unclear and confusing presentation of ideas.

- (58-72) Few errors in spelling and grammar. A few problems in use of topic sentences. Paragraphs often have basic topic sentences and supporting material. Mostly readable, but some parts still require some effort to understand. Presentation of ideas is

sometimes unclear and lacks logical sequencing. Ineffective transition in flow of thought.

- (73-87) A few errors in spelling and grammar. Paragraphs are mostly well developed, but some lack strong topic sentences and sufficient supporting material. Mostly readable in the whole report. Presentation of ideas generally clear and coherent. Effective transition in flow of thought.
- (88-100) Well proofread. Paragraphs are well developed, have strong topic sentences and sufficient supporting material. Clear expression of ideas and logical progression of ideas in arguments. Presentation of ideas is very clear and coherent. Excellent transition in flow of thought.

R6. Report formatting and organization (Formatting, overall structure and coherence)

- (0-34) Submitted work is so poor that it cannot be regarded as a report.
- (35-49) Little or no structure. Missing major items in the template. The work fails to reach the barely acceptable standard.
- (50-57) Items listed in the template are included. Some minor deviations from the formatting requirements. Basic report organization, but a few key contents are not supported with suitable detail.
- (58-72) A few deviations from the formatting requirements. Some of the items (including caption and reference) are consistently formatted and correctly referred. Good report organization, with suitable supporting material in most cases. However, there is still some incoherence between different sections.
- (73-87) Most of the items are consistently formatted and correctly referred. Good report organization, with suitable supporting material in most cases. The report is logically structured in most cases, and show general coherence between different sections.
- (88-100) All the items are consistently formatted and correctly referred. Overall organization excellent, with necessary material to support key points, including figures/tables as appropriate. The whole report is logically structured, with strong coherence between different sections.

P1. Presentation content (Presentation slides and poster)

- (0-34) No submitted work, or the student is absent in the presentation.

- (35-49) Student is present in presentation / poster session, but the work fails to reach the barely acceptable standard.

- (50-57) Cover most important points, but lack detail in some cases. No major errors and misconceptions. Poor organization, but audience can still follow.

- (58-72) Cover most important points, and include suitable detail in most cases. A few inaccurate or irrelevant points. Fair organization and there are some ad-hoc jumps in topics.

- (73-87) All major points covered and explained clearly and correctly. Information is organized mostly in logical and interesting sequence.

- (88-100) Major points strongly supported with suitable detail, e.g. system demonstration, and experiment results. Information is organized in logical, interesting sequence.

P2. Communication skills (Presentation and poster session)

- (0-34) Absent in presentation, or unable to communicate

- (35-49) Student attends the presentation, but their communication skill make it very difficult for audience to follow the oral presentation.

- (50-57) Confident and familiar in only some parts. The audience can follow most of the oral presentation with some effort. Poor time keeping (e.g. too short, or use up time in the middle of the presentation slides.) Answer at least one question correctly, may need clarifications.

- (58-72) Confident and familiar in most parts. The audience can follow most of the oral presentation with ease. Fair time keeping and allocation of time for some topics is inappropriate. Answer questions correctly, but need clarifications.

- (73-87) Confident and familiar throughout the presentation. Effective oral presentation of complicated information. Good time-keeping and suitable allocation of time for different topics. Answer questions correctly and concisely.

- (88-100) Confident and relaxed. Effective and attractive oral presentation of complicated information. Excellent use of presentation time. Handle difficult questions with ease and confidence.