



NOTES OF GUIDANCE

# FINAL YEAR PROJECT 1 & FINAL YEAR PROJECT 2

EDITION 2022



DIPLOMA IN CIVIL ENGINEERING  
POLYTECHNIC , MALAYSIA

MINISTRY OF HIGHER EDUCATION



## INTRODUCTION

This Notes of Guidance (NOG) is designed to meet the needs and requirement to complete The Final Year Project (FYP) for Diploma in Civil Engineering programme. This NOG comprises a step-by-step guide for the implementation of Final Year Project 1 (DCC40181) and Final Year Project 2 (DCC50194) The NOG presents a complete explanation for Project Supervisors and as well as for students to execute the FYP in terms of:

- Selection of Project Title
- Project Criteria
- Cost of Study/Project
- Sustainable Development Goal (SDG) of Project
- Marketable/Commercialization/Viability of Project
- Methods/Approach
- Assessments of Courses
- Detail Assessments of Courses
- Project Diversity/Plagiarism
- Platform/Medium of Courses
- Evidence
- References
- Preventive Steps

This NOG is a concise and compact guideline for both project supervisors and students and shall be read collectively with the *Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021*.

It is expected that this NOG will be able to assist Project Supervisors and students to plan, manage, organize, and execute their FYP properly and logically to subsequently be able to deliver the best Final Year Project.

## PUBLICATION COMMITTEE

- Patron:** DR. NORHAYATI BINTI ZAKARIA  
Pengarah  
Bahagian Kurikulum  
Jabatan Pendidikan Politeknik Dan Kolej Komuniti (JPPKK)
- Advisor:** NORAINA BINTI ABD RAHMAN  
Timbalan Pengarah  
Bahagian Kurikulum  
Jabatan Pendidikan Politeknik Dan Kolej Komuniti (JPPKK)
- ZURAIDAH BINTI AB MOIN  
Pensyarah  
Politeknik Sultan Salahuddin Abdul Aziz Shah
- External Examiner:** PROF. MADYA. DR. IR. CHE MAZNAH BINTI MAT ISA  
Pensyarah Kanan  
Pengajian Kejuruteraan Awam, Kolej Pengajian Kejuruteraan,  
Universiti Teknologi Mara Shah Alam
- Coordinators:** Nor Suhaili Binti Mohamad Zin (JPPKK)  
Muhammad Lutfi Bin Othman (PPD)
- Authors:** NOG Final Year Project 1
1. Nuratikah Binti Seman (PPD)
  2. Eric Yeo Cheng Aun (PMK)
  3. Siti Harni Binti Zainal (PMK)
  4. Shahrin Nazida Binti Salleh (PMK)
  5. Mazlina Binti Abdul Ghani (PMK)
  6. Azmi Bin Mohammad (PSAS)
  7. Muhammad Lutfi Bin Othman (PPD)
  8. Sarina Binti Talib (PSA)
- NOG Final Year Project 2
1. Ts. Dr. Sunitha V. Doraisamy (PUO)
  2. Dr. Zuraidah Binti Ahmad (PPD)
  3. Dr. Ruslawati Binti Abd Wahab (PPD)
  4. Rabeah Adawiyah Binti Hashim (PSA)
  5. Amilia Noorlin binti Jelani (PPD)
  6. Nor Haniza Binti Mustafar Kamar (PPD)
  7. Azizah Binti Tukiman (PPD)
  8. Siti Sara Binti Yaacob Zubir (PSAS)
- Editors:**
1. Nor Haniza Binti Mustafar Kamar (PPD)
  2. Ahmad Zaidi Bin Mispan (PPD)
  3. Ts. Mohammed Farid Bin Ishak (PPD)

## *Token of Appreciation*

Deepest gratitude to all those who contributed on the development and successful execution of the *Notes of Guidance for Final Year Project 1 and Final Year Project 2 Edition 2022* respectively for the programme *Diploma Kejuruteraan Awam*, Politeknik Malaysia.

# CONTENT

Introduction	i
Publication Committee	ii
Token of Appreciation	iii

## **NOTES OF GUIDANCE FOR FINAL YEAR PROJECT 1**

1.0	INTRODUCTION	1
2.0	OBJECTIVE	1
3.0	ASSESSMENT REQUIREMENTS	2
4.0	INSTRUCTIONS	4
5.0	CONTENTS FOR PROGRESS PRESENTATION AND FINAL PRESENTATION POWERPOINT SLIDES	7
6.0	CONTENTS OF CHAPTERS IN THE PROJECT PROPOSAL	11

## **NOTES OF GUIDANCE FOR FINAL YEAR PROJECT 2**

1.0	INTRODUCTION	15
2.0	OBJECTIVE	15
3.0	ASSESSMENT REQUIREMENTS	16
4.0	INSTRUCTIONS	18
5.0	CONTENTS FOR PROGRESS PRESENTATION AND FINAL PRESENTATION POWERPOINT SLIDES	21

---

## NOTES OF GUIDANCE FOR FINAL YEAR PROJECT 1:

### 1.0 INTRODUCTION

**FINAL YEAR PROJECT 1 (FYP 1)** is a course compulsory to be undertaken by Diploma in Civil Engineering (*DKA*) students as a pre-requisite before allowed to proceed with their **FINAL YEAR PROJECT 2**. FYP 1 is to be completed in one semester and students are required to produce a Project Proposal in groups which must be verified by their assigned supervisor and the FYP 1 Project Coordinator.

### COURSE LEARNING OUTCOMES (CLO):

- CLO 1 - Develop the investigation process in civil engineering based in a clear and concise manner (C3, PLO 4).
- CLO 2 - Complete a presentation for project proposal using an engineering appropriate standard (A3, PLO 10).
- CLO 3 - Propose appropriate methodology in management and resources based on civil engineering project (A3, PLO 11).
- CLO 4 - Display self-education skills in gathering technical information from various resources (P3, PLO 12).

### 2.0 OBJECTIVE

The main aim of this course is to enhance students' knowledge and skills in solving problems through a structured project research to produce competent and productive technicians. Upon completing this course, students should be able to:

- i. Identify and describe the problem and scope of the project clearly.
- ii. Collect, analyse, and present data into meaningful information using relevant tools.
- iii. Select, plan, and execute a proper methodology in problem-solving.
- iv. Work independently and ethically.
- v. Present the proposal in written and oral format effectively.

### 3.0 ASSESSMENT REQUIREMENTS:

Students are to complete the FYP 1 in groups of two to four members. To meet the course requirements, the following assessments are required to be carried out:

a. Logbook (Individual)

The logbook is written and updated weekly by students to explain their project development progress and is to be submitted at the end of the assessment period.

- i. Logbook is an assessment tool, compulsory to be written and updated every week by each student in a project group and is submitted to their respective project supervisors for checking and approval.
- ii. The details to be written in the logbook consist of project progress, data and analysis conducted, sources and references, issues, problems, or constraints that are faced by the students during the development and implementation of their project. This also includes methods or solutions that are used to overcome them and any discussion that were carried out throughout the semester.
- iii. The content or writing in the logbook must describe the activities performed by students throughout the execution of their FYP.

b. Project Proposal (group)

The Project Proposal is submitted by the students to their respective project supervisors in the form of digital document (softcopy) or / and printed document (hardcopy).

- i. A complete project proposal is written and prepared and must consist of Chapter 1 – Introduction, Chapter 2 – Literature Review, Chapter 3 – Methodology and Chapter 4 – Expected Outcomes. Attachment such as Gantt Chart and Project Cost Estimation must be attached in the project proposal.
- ii. The values of learning and continuous search for information are to be adopted to gain advanced information related to the research topic to complete the proposal.

- iii. The project Proposal must be submitted by the end of semester of the academic session referring to the Academic Calendar.
  - iv. The minimum number of pages of project proposal is 15 and maximum number of pages is 30.
  - v. The formatting of the proposal should comply with the project guideline as outlined in '*Buku Panduan Projek Pelajar (Program Diploma) edisi 2021*'.
  - vi. All research, innovation or products developed are owned by the respective institution.
- c. Presentation
- i. Two presentations are held at mid and end of semester of the academic session referring to the Academic Calendar.
  - ii. The first presentation which is the Progress Presentation focuses on the progress of the project development by the students from the beginning of the semester up to mid-semester. The first presentation is evaluated by panels from related fields as the students' chosen FYP work scope.
  - iii. The Final Presentation focuses on all chapters in the syllabus where students are to present their final data analysis output, results, conclusion, and recommendations. The final presentation is evaluated by panels from related fields as the students' chosen FYP work scope.
  - v. Each group member is assessed and evaluated individually, for both Progress Presentation and Final Presentation.
  - vi. The presentation schedule is planned and prepared by the academic department's project coordinator.
- d. Project Task (group)
- A Project Task is a progress report in the form of a document (video, journey map, power point slides, etc) that explains in detail how far the student has progressed towards the completion of their project. It outlines the activities that are carried out, the tasks that are completed, and the milestones that are reached by the students prior to their project plan. The project task report provides a brief look

at the preliminary findings or in-progress work on the project that is being carried out by the students. This gives their project supervisors or panels an opportunity to evaluate their work and further suggest or request changes. This also gives the student a chance to discuss problems, challenges, or issues during the execution of their project and find ways to overcome them. The project task report is required to be submitted by the students to their respective project supervisor or panels by end of the semester.

All assessments as mentioned above for the students are required and compulsory to be assessed and evaluated by the supervisors individually although the project is conducted as a group.

Students in a group should clearly understand and perform their roles and responsibilities individually on the development and execution of their project from the beginning to the end. The supervisors should be able to clearly define each students' contribution to their project through the assessments.

#### **4.0 INSTRUCTIONS:**

##### **4.1 Project Criteria**

It is recommended that student should also take opportunities towards producing a high impact final year project which can be executed through the criteria listed below:

- i. Technical and Vocational Education and Training (TVET)
- ii. Industrial Revolution (IR) 4.0
- iii. Practicality or user friendly
- iv. Sustainable Development Goal (SDG)
- v. Present needs and Future needs
- vi. Green Technology, Reduce, Reuse, Recycle (3R)
- vii. Collaboration such as community or industry
- viii. Application or Marketable

The project's title or field should be diverse and covers the Body of Knowledge (BOK) of the DKA programme.

#### **4.2 Research**

There are various types of projects that can be considered for the completion of the FYP 1 such as product innovation and applied research, as well as improvement of practices, services, or existing products (e.g.: simulation, wireframe, sketching, paper or physical prototype, user journey and storyboard).

Types of research are applied research, action research and innovation which research topics related to civil engineering. Any relevant research methods can be implemented/applied to produce the intended outcomes of the project or innovation project. Example of research methods for innovation: Design Thinking (DT), Word Storm, Journey Map, Concept Mapping.)

If DT is considered, the execution of FYP 1 should follow the steps below:

- i. Empathy
- ii. Define
- iii. Ideate
- iv. Prototype
- v. Testing

#### **4.3 Reference:**

- i. A minimum of 10 references should be included from sources such as books, journals, websites or internet, articles, etc.
- ii. The references to be cited should be in the range of 10 years back. References aged more than 10 years can be included with a justification or logical explanation significant to the project conducted.
- iii. References are written and cited using either the American Psychological Association (APA) or Institute of Electrical and Electronics Engineers (IEEE) referencing styles (depends on the department).

- iv. Students are recommended to use Mendeley References tool (not compulsory).

#### **4.4 Platform:**

- i. Online platforms such as CIDOS, Google Meet and MS Teams can be used as tools to share information and collaborate ideas to update students' weekly progress, submission of report drafts and conduct discussion sessions between students and supervisors.
- ii. Digital collaborative whiteboards such as Jamboard, MIRO and Microsoft Whiteboard are suitable for interactive discussions.
- iii. Other free communication software such as emails and smartphone applications (Telegram and WhatsApp) are also recommended as a continuous discussion method to sustain communication between all parties.

#### **4.1. Project Diversity/Novelty/Plagiarism:**

- i. To achieve diversity in projects, students must avoid duplicating projects whether current or in the past.
- ii. It is advisable to modify or change project proposals that have the same titles as existing ones. Projects will be rejected if any plagiarism is detected.
- iii. Students are recommended to use free plagiarism detection online tools such as [plagtracker.com](http://plagtracker.com), [scanmyessay.com](http://scanmyessay.com), [plagiarismdetector.net](http://plagiarismdetector.net). or Turnitin. The index of plagiarism shown shall be enclosed in the Final Year Report.
- iv. The permissible plagiarism index is limited to 30%.

## 5.0 CONTENTS FOR PROGRESS PRESENTATION AND FINAL PRESENTATION POWERPOINT SLIDES

### 5.1 Progress Presentation

Presentation 1 or **Progress Presentation** PowerPoint slides must contain:

SLIDE	CONTENTS
<b>SLIDE 1</b>	<b>PROJECT TITLE, STUDENT'S, AND SUPERVISOR'S NAME</b>
<b>SLIDE 2</b>	<b>CONTENTS:</b> <ol style="list-style-type: none"> <li>i. Brief Introduction (Background of the Project)</li> <li>ii. Design Process based on FYP 1</li> <li>iii. Problem Statement</li> <li>iv. Objective of the project/study</li> <li>v. Project Scope</li> <li>vi. Expected Results</li> </ol>
<b>SLIDE 3</b>	<b>DESIGN PROCESS BASED ON FYP:</b> Design Process 1 – How and who was targeted for the empathy study based on the students' FYP.
<b>SLIDE 4</b>	<b>DESIGN PROCESS BASED ON FYP:</b> Design Process 2 – The problem that is defined based on the empathy study that has been conducted. The students must explain the method that are used to define the problem based on the empathy study.
<b>SLIDE 5</b>	<b>DESIGN PROCESS BASED ON FYP:</b> Design Process 3 – The idea that will be created based on Design process 1 and 2, which mainly focuses on solving the problem(s) or issue(s) and substantially that helps the targeted stakeholders. Show the users and non-users feedback data using an appropriate template.
<b>SLIDE 6</b>	<b>BRIEF PROJECT INTRODUCTION (BACKGROUND OF THE PROJECT):</b> Explains on the related field that will be focused in the FYP. Narrates on the background of the intended project in terms of issue(s)/problem(s) often endured in the mention field by stakeholders and the significance of the project.

<b>SLIDE 7</b>	<p><b>PROBLEM STATEMENT:</b></p> <p>Problem statement refers to problems or issues which needs in depth study or research. Here, discussion on the problem or issue(s) are addressed and solved either completely or partially.</p>
<b>SLIDE 8</b>	<p><b>OBJECTIVE OF THE PROJECT:</b></p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol> <p>It is to be explained clearly what the objectives are and what are intended to be achieved at the end of this project. It is recommended that three objectives are listed based on the type of project conducted. The SMART criterion (S=Specific, M=Measurable, A=Achievable, R=Realistic and T=Time management) is also recommended as a guide in determining the project's objectives.</p>
<b>SLIDE 9</b>	<p><b>SCOPE OF THE PROJECT:</b></p> <p>The scope of the study explains the limitations of the project, to ensure the study does not stray from the intended scope or limitation.</p>
<b>SLIDE 10</b>	<p><b>DESIGN PROCESS BASED ON FYP:</b></p> <p>Design Process 4 – The innovation or product that is intended to be created or developed through this FYP, incorporating suitable technologies. Students should be able to explain the selection of prototype along with appropriate justification on how their prototype would be able to solve the issue or problem mentioned by them in their project.</p>
<b>SLIDE 11</b>	<p><b>DESIGN PROCESS BASED ON FYP:</b></p> <p>Design Process 5 – Once the innovation/product/prototype is completed, the method used to test-run the product among the group members and further with experts should be explained by the student. The choice made to conduct the test-run (including the choice of experts) should be justified accordingly by the student.</p>
<b>SLIDE 12</b>	<p><b>REFERENCES</b></p>

	<p>Insert more than FIVE (5) referred/indexed journals within ten years latest and other references (conferences proceeding, books, reports, etc.) that are very much relevant and validated.</p>
<p>The explanation for <b>SLIDE 6</b> and <b>SLIDE 7</b> should be supported with few reliable resources that show the validity and significance of the issues(s)/problem(s) that leads towards the importance of conducting the intended FYP.</p>	

## 5.2 Final Presentation

Presentation 2 or **Final Presentation** PowerPoint slides must contain:

SLIDE	CONTENTS
<b>SLIDE 1</b>	<b>PROJECT TITLE, STUDENT’S, AND SUPERVISOR’S NAME</b>
<b>SLIDE 2</b>	<p><b>CONTENTS:</b></p> <ul style="list-style-type: none"> <li>i. Brief Introduction (Background of the Project)</li> <li>ii. Problem Statement</li> <li>iii. Objective of the project/study</li> <li>iv. Project Scope</li> <li>v. Design Thinking Process based on FYP</li> <li>vi. Methodology Flow Chart</li> <li>vii. Gantt Chart</li> <li>viii. Project Cost Estimation</li> <li>ix. Expected Results</li> </ul>
<b>SLIDE 3</b>	<p><b>INTRODUCTION (BACKGROUND OF PROJECT):</b></p> <p>Give a brief introduction of the proposed project to be conducted (using pictures to give good capture and better understanding).</p>
<b>SLIDE 4</b>	<p><b>PROBLEM STATEMENT:</b></p> <p>Highlight the issues or problem relating or surrounding the project as justification to proceed with the topic.</p>
<b>SLIDE 5</b>	<p><b>OBJECTIVE OF THE PROJECT:</b></p> <ul style="list-style-type: none"> <li>1.</li> <li>2.</li> </ul>

	<p>3.</p> <p>The objectives should comprise a maximum of 3 objectives.</p>
<b>SLIDE 6</b>	<p><b>SCOPE OF THE PROJECT:</b></p> <p>Highlight specifically the main scope or focus of the intended project to achieve the objectives.</p>
<b>SLIDE 7</b>	<p><b>METHODOLOGY FLOW CHART:</b></p> <p>Insert the methodological flow chart where it summarizes the proposed methodological process that would be conducted throughout FYP 1 to achieve the objectives (videos or pictures can be used to support the process).</p> <p>Students should be able to explain each activity flow that are to be carried out from the inception stage until the completion of their project/product in a logical sequence.</p>
<b>SLIDE 8</b>	<p><b>GANTT CHART:</b></p> <p>Insert the Gantt Chart (Project Schedule) that would be referred to during the execution of FYP 1 containing a summary of works or activities to complete the project.</p>
<b>SLIDE 9</b>	<p><b>PROJECT COST ESTIMATION:</b></p> <p>A table of Project Cost Estimation which consists of Item, Quantity, Price Per Item, Total Price, Expected Supplier, and the Total Cost for the project.</p>
<b>SLIDE 10</b>	<p><b>EXPECTED OUTCOMES:</b></p> <p>Give a good indication of what you expect to get out of this project/study.</p>
<b>SLIDE 11</b>	<p><b>REFERENCES</b></p> <p>Insert more than TEN (10) referred/indexed journals ranged within ten years back and other references (conferences proceeding, books, reports, etc.) that are very much relevant and validated.</p>
<b>SLIDE 12</b>	<p><b>REFERENCES</b></p> <p>Insert more than FIVE (5) referred/indexed journals within ten years latest and other references (conferences proceeding, books, reports, etc.) that are very much relevant and validated.</p>

The explanation for **SLIDE 3 and SLIDE 4** should be supported with few reliable resources that show the validity and significance of the issues(s)/problem(s) that leads towards the importance of conducting the intended FYP.

## 6.0 CONTENTS OF CHAPTERS IN THE PROJECT PROPOSAL

The Project Proposal is a document that seeks to address key questions surrounding students' Final Year Project. The project proposal concisely describes what the project will accomplish, why the stated objectives are important, and how the students intend to achieve them.

During the completion of the Final Year Project 1, students are required to prepare a project proposal as a preliminary step towards completing their final year project. The project proposal is used to assess the quality and originality of the student's ideas, their understanding of the purpose of their project, and the ultimate feasibility of the project.

The structure of the students' project proposal varies depending on the nature of the work that they plan to undertake, and the discipline in which their project is situated. Students are required to include basic information and any common components in the project proposal as elaborated in the following.

### CHAPTER 1: INTRODUCTION

In this chapter, the intended project is introduced to give a complete picture and explanation. The introduction should focus and highlight the main issues that comply with the project that is intended to be carried out. The issues that are discussed should be explained briefly within a few paragraphs supported with reliable citations.

#### 1.1 Problem Statement

Problem statement refers to the problems or issues which needs in-depth study or research. Description on the problem or issue that needs to be addressed and as well to be solved, either completely or partially is explained in this section. The background of the project is explained in this section which includes a summary of what is already known about the issue or topic as well as some of the problem areas that directly relate

to their proposed work. Certain disciplinary fields may require the student to demonstrate their knowledge by placing their project in relation to published research or others' work in the area, where it is entailed in the literature review. Ultimately, the originality of their proposed work is recognised and the relevance is understood.

## **1.2 Objective**

This section explains clearly about what are intended to be achieved at the end of this project. It is recommended that three objectives are identified based on the type of project. The SMART criterion (S=Specific, M=Measurable, A=Achievable, R=Realistic and T=Time management) is also recommended as a guide in determining the project's objectives. This should relate directly to the requirements found within their subject outline.

## **1.3 Scope of Study**

This section highlights the limitations of the students' project activities to ensure focus and achievability. Students are required to explain the range of their work scope to a specific location, timeline, target group and material selection.

## **CHAPTER 2: LITERATURE REVIEW**

A literature review surveys books, scholarly articles, and any other sources relevant to a particular issue, area of research, or theory, and by doing so, provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated. Literature reviews are designed to provide an overview of sources that have been explored while researching a particular topic and to demonstrate to readers how a research fits within a larger field of study. Literature review is not just a summary of research or studies that have been conducted, but also useful in showing the various perspectives of the research completed.

The purpose of a literature review is to:

- Place each work in the context of its contribution to understanding the research problem being studied,

- Describe the relationship of each work to the others under consideration,
- Identify new ways to interpret prior research,
- Reveal any gaps that exist in the literature,
- Resolve conflicts amongst seemingly contradictory previous studies,
- Identify areas of prior scholarship to prevent duplication of effort,
- Point the way in fulfilling a need for additional research, or
- Locate your own research within the context of existing literature [very important].

The selected citations that are quoted should be focused on the study. In literature review, it is important to show the source of reference by stating the name of the author and the year of publish. Methods of writing literature review are as follows:

- Text/sentence..... (author, year).
- According to author (year), text/sentence....
- Text/sentence..... (author et al., year).
- According to author et al., (year), text/sentence....
- Author, (year) has stated/explained/elaborated/given...
- Author et al., (year) has stated/explained/elaborated/given...

### **CHAPTER 3: METHODOLOGY**

Methodology is a systematic, theoretical analysis of the methods applied to a field of study. The methodology process designed for the intended project should be able to solve the issues or problems that substantially allows for the aim and objectives of the project to be achieved. Therefore, the flow of the methodology process should be well thought off from the beginning up to the end of the project.

A clear picture and narration of this chapter should be clearly stated and discussed. The methodology section describes the methods and materials that the students intend to use within their project.

It will explain in detail how they acquire the information needed and explain how the project is managed. If a particular theory or model is to be used, this should be stated. Details such as timelines, budgets, locations, or the software to be used are important to be included here.

#### **CHAPTER 4: EXPECTED OUTCOMES**

This section should give a good indication of what students expect to achieve at the end of this project. It should also include the data analysis and possible outcomes to the theory and questions that the students raised. In this section, the significance of the work is summarized.

#### **CHAPTER 5: CONCLUSION**

This section summarizes the project including the problem, motivation or significance of project, the proposed solution, and the benefits to the targeted user.

#### **CHAPTER 6: REFERENCES**

The reference should list all the sources to complete the project and the project proposal applying the APA or IEEE referencing style. Copying of material by another author without proper citation or without required permissions is plagiarism. A reference may be a citation of a text that has been used in the creation of a piece of work such as an essay, report, or oration.

Its primary purpose is to allow people who read such work to examine the author's sources, either for validity or to learn more about the subject. Such items are often listed at the end of an article or book in a section marked "Bibliography" or "References". A bibliographical section often contains works not cited by the author but used as background reading or listed as potentially useful to the reader. A reference section contains only those works cited by the author(s) in the main text.

---

## NOTES OF GUIDANCE FINAL YEAR PROJECT 2

### 1.0 INTRODUCTION

**FINAL YEAR PROJECT 2 (FYP 2)** is a course that is undertaken by students in their final semester after completing the pre-requisite course FINAL YEAR PROJECT 1 as a prior condition. FYP 2 covers knowledge and skills in civil engineering practices. Students are also exposed to improving communication skills, working in teams, planning, decision making, providing recommendations, and enhancing creativity by using related facilities to design a system. This course also covers activities such as conducting experiments in a laboratory or workshop, performing field works, conducting academic research, and designing products related to Civil Engineering. Students will learn methods to analyse data and prepare a presentation along with report writing.

#### **COURSE LEARNING OUTCOMES (CLO):**

- CLO 1 - Organize the project tasks based on research methodology by using appropriate tools (P4, PLO 5).
- CLO 2 - Analyze the project results in achieving objective based on relevant standard and regulation (C4, PLO 4).
- CLO 3 - Write the project report based on project finding using appropriate format (C3, PLO 10).
- CLO 4 - Complete the project presentation confidently and effectively (A5, PLO 10).

### 2.0 OBJECTIVE

The main aim of this course is to enhance students' knowledge and skills in solving problems through a structured project research to produce competent and productive technicians. Upon completing this course, students should be able to:

- i. Identify and describe the problem and scope of the project clearly.
- ii. Collect, analyse, and present data into meaningful information using

- iii. relevant tools.
- iv. Select, plan, and execute a proper methodology in problem-solving.
- v. Work independently and ethically.
- vi. Present the results in written and oral format effectively.

### 3.0 ASSESSMENT REQUIREMENTS

To meet the course requirements, the following assessments are required to be carried out:

#### a. Logbook (individual)

The logbook is written and updated weekly by students to explain their project development progress and is to be submitted at the end of the assessment period.

- i. Logbook is an assessment tool, compulsory to be written and updated every week by each student in a project group and is submitted to their respective project supervisors for checking and approval.
- ii. The details to be written in the logbook consist of project progress, data and analysis conducted, sources and references, issues, problems, or constraints that are faced by the students during the development and implementation of their project. This also includes methods or solutions that are used to overcome them and any discussion that were carried out throughout the semester.
- iii. The content or writing in the logbook must describe the activities performed by students throughout the execution of their FYP.

#### b. Final Report / Technical Report (group/individual)

The final report is submitted by the students to their respective project supervisors in the form of digital document (softcopy) or / and printed document (hardcopy).

- i. A complete report is written and must consist of Abstract, Chapter 1 – Introduction, Chapter 2 – Literature Review, Chapter 3 – Methodology, Chapter 4 – Finding and Discussion, and Chapter 5 –

Conclusion and Recommendations. A detailed explanation is described in 'Buku Panduan Projek Pelajar (Program Diploma) edisi 2021'.

- ii. Online research may be conducted from reliable sources. Examples of websites that contains resources for citations are as follows:
  - a. Google Scholar
  - b. Microsoft Academic Research
  - c. Lens.org
  - d. oatd.org
  - e. Dimension.ai
- i. The values of learning and continuous search for information are to be adopted to gain advanced information related to the research topic to complete report writing.
- ii. The Final Report must be submitted by the end of semester of the academic session referring to the Academic Calendar.
- iii. The formatting of the report should comply with the project guideline as outlined in 'Buku Panduan Projek Pelajar (Program Diploma) edisi 2021'.
- iv. All research, innovation or products developed are owned by the respective institution.

**c. Presentation:**

- i. Two presentations are held at mid and end of semester of the academic session referring to the Academic Calendar.
- ii. The first presentation which is the Progress Presentation focuses on the progress of the project development by the students from the beginning of the semester up to mid-semester. The first presentation is evaluated by internal panels (academicians within the institute) from related fields as the students' chosen FYP work scope.
- iii. The Final Presentation focuses on all chapters in the syllabus where students are to present their final data analysis output, results, conclusion, and recommendations. The final presentation is evaluated

by external panels from related fields as the students' chosen FYP work scope.

- iv. Each group member is assessed and evaluated individually, for both Progress Presentation and Final Presentation.
- v. The presentation schedule is planned and prepared by the academic department's project coordinator.

**d. Project Task (group)**

A Project Task is a progress report in the form of a document (video, journey map, power point slides, etc) that explains in detail how far the student has progressed towards the completion of their project. It outlines the activities that are carried out, the tasks that are completed, and the milestones that are reached by the students prior to their project plan. The project task report provides a brief look at the preliminary findings or in-progress work on the project that is being carried out by the students. This gives their project supervisors or panels an opportunity to evaluate their work and further suggest or request changes. This also gives the student a chance to discuss problems, challenges, or issues during the execution of their project and find ways to overcome them. The project task report is required to be submitted by the students to their respective project supervisor or panels by end of the semester.

## **4.0 INSTRUCTIONS**

### **4.1 Project Criteria**

It is recommended that student should also take opportunities towards producing a high impact final year project which can be executed through the criteria listed below:

- i. High Impact.
- ii. Apply the IR 4.0 (BiG data, Simulation, IoT, etc.).
- iii. Practicality or user friendly

- iv. Sustainable (Present and Future needs) where the innovation, product or research could be created to fulfil the Sustainable Development Goal (SDG) design by United Nation (UN) such as:
  - Clean Water and Sanitation
  - Affordable and Clean Energy
  - Industry, Innovation, and Infrastructure
  - Sustainable Cities and Communities
  - Low Carbon Cities
- i. Green (3R)
- ii. Collaboration effective
- iii. Marketable:
  - The innovation, product or research by the students should be applicable in institutions, communities, or industries.
  - The innovation, product or research should have marketable goal and value.

#### **4.2 Cost**

- i. The cost of the project must be stated and presented clearly in the report.
- ii. The cost of the project is also presented during the presentation. The specifications and details of the cost of the prototype and the cost budget in a real-case scenario must be explained.

#### **4.3 Reference**

- i. A minimum of 20 references should be included from sources such as books, journals, websites or internet, articles, etc.
- ii. The references to be cited should be in the range of 10 years back. References aged more than 10 years can be included with a justification or logical explanation significant to the project conducted.
- iii. References are written and cited using either the American Psychological Association (APA) or Institute of Electrical and Electronics Engineers (IEEE) referencing styles (depends on the department).

- 
- iv. Students are recommended to use Mendeley References tool (not compulsory).

#### **4.4 Platform**

- i. Online platforms such as CIDOS, Google Meet and MS Teams can be used as tools to share information and collaborate ideas to update students' weekly progress, submission of report drafts and conduct discussion sessions between students and supervisors.
- ii. Digital collaborative whiteboards such as Jamboard, MIRO and Microsoft Whiteboard are suitable for interactive discussions.
- iii. Other free communication software such as emails and smartphone applications (Telegram and WhatsApp) are also recommended as a continuous discussion method to sustain communication between all parties.

#### **4.5 Project Diversity/Novelty/Plagiarism:**

- i. To achieve diversity in projects, students must avoid duplicating projects whether current or in the past.
- ii. It is advisable to modify or change project proposals that have the same titles as existing ones. Projects will be rejected if any plagiarism is detected.
- iii. Students are recommended to use free plagiarism detection online tools such as [plagtracker.com](http://plagtracker.com), [scanmyessay.com](http://scanmyessay.com), [plagiarismdetector.net](http://plagiarismdetector.net). or Turnitin. The index of plagiarism shown shall be enclosed in the Final Year Report.
- iv. The permissible plagiarism index is limited to 30%.

## 5.0 CONTENTS FOR PROGRESS PRESENTATION AND FINAL PRESENTATION POWERPOINT SLIDES

### 5.1 Progress Presentation

Presentation 1 or **Progress Presentation** PowerPoint slides must contain:

SLIDE	CONTENTS
<b>SLIDE 1</b>	<b>PROJECT TITLE, STUDENT'S, AND SUPERVISOR'S NAME</b>
<b>SLIDE 2</b>	<b>CONTENTS:</b> <ol style="list-style-type: none"> <li>i. Brief Introduction of project</li> <li>ii. Problem Statement</li> <li>iii. The objective of the project/study</li> <li>iv. Scope of the project/study</li> <li>v. Methodology</li> <li>vi. Gantt Chart (Project Schedule)</li> <li>vii. Result Analysis (up to the recent week)</li> </ol>
<b>SLIDE 3</b>	<b>INTRODUCTION:</b> Give a brief introduction of the project conducted.
<b>SLIDE 4</b>	<b>PROBLEM STATEMENT:</b> Highlight the issues or problem relating or surrounding the project as justification to proceed with the topic.
<b>SLIDE 5</b>	<b>OBJECTIVE OF THE PROJECT/STUDY:</b> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol> It is recommended that three objectives are listed based on the type of project conducted.
<b>SLIDE 6</b>	<b>SCOPE OF THE PROJECT/STUDY:</b> Choose and state specifically the main scope/focus in the intended project to achieve the objectives.
<b>SLIDE 7</b>	<b>METHODOLOGY:</b>

	<ul style="list-style-type: none"> <li>i. Insert the methodology flow chart to summarize the methodological process conducted throughout the project to achieve stated objectives.</li> <li>ii. Under this content but in different slide pictures/diagrams/tables/charts could be inserted as well to show the work/method/procedure conducted.</li> <li>iii. Insert the Gantt Chart to show the actual work progress as compared to the planned schedule of work/activity to be conducted to complete the project.</li> </ul>
<p><b>SLIDE 8</b></p>	<p><b>THE PRESENT STATUS:</b></p> <ul style="list-style-type: none"> <li>i. State the analysis/data/test product/outcome of the analysis/test product to date/up to the present date based on the methodological work/process conducted as narrated in the previous slide(s).</li> <li>ii. Pictures/diagram/charts/tables could also be shown here whichever are relevant.</li> </ul>
<p><b>SLIDE 9</b></p>	<p><b>CONCLUSION:</b></p> <ul style="list-style-type: none"> <li>i. The conclusion should show clearly which part of the aim and objectives of the project that are achieved or yet to be achieved, and stages/process that needs to be further carried out to fulfil the desired project.</li> <li>ii. Obstacles/issues/constraints underwent till date in conducting the project.</li> </ul>
<p>The explanation for <b>SLIDE 3</b> and <b>SLIDE 4</b> should be supported with few reliable resources that show the validity and significance of the issues(s)/problem(s) that leads towards the importance of conducting the intended FYP.</p>	

## 5.2 Final Presentation

Presentation 2 or **Final Presentation** PowerPoint slides must contain:

SLIDE	CONTENTS
<b>SLIDE 1</b>	<b>PROJECT TITLE, STUDENT'S, AND SUPERVISOR'S NAME</b>
<b>SLIDE 2</b>	<b>CONTENTS:</b> <ol style="list-style-type: none"> <li>i. Brief Introduction of project</li> <li>ii. Problem Statement</li> <li>iii. Objective of the project/study</li> <li>iv. Scope of the project/study</li> <li>v. Methodology</li> <li>vi. Result Analysis</li> <li>vii. Conclusion</li> <li>viii. Recommendation</li> </ol>
<b>SLIDE 3</b>	<b>INTRODUCTION:</b> Give a brief introduction of the project conducted.
<b>SLIDE 4</b>	<b>PROBLEM STATEMENT:</b> Highlight the issues or problem relating or surrounding the project as justification to proceed with the topic.
<b>SLIDE 5</b>	<b>OBJECTIVE OF THE PROJECT/STUDY:</b> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol> It is recommended that three objectives are listed based on the type of project conducted.
<b>SLIDE 6</b>	<b>SCOPE OF THE PROJECT/STUDY:</b> Highlight specifically the main scope or focus in the intended project to achieve the objectives.

<b>SLIDE 7</b>	<p><b>METHODOLOGY:</b></p> <ul style="list-style-type: none"> <li>i. Insert the methodology flow chart to summarize the methodological process conducted throughout the project to achieve stated objectives.</li> <li>ii. Under this content but in different slide pictures/diagrams/tables/charts could be inserted as well to show the work/method/procedure conducted.</li> </ul>
<b>SLIDE 8</b>	<p><b>FINDING AND DISCUSSION:</b></p> <ul style="list-style-type: none"> <li>i. State the result or the outcome of the project at the end based on the methodological work/process conducted as narrated in the previous slide(s).</li> <li>ii. Pictures/diagram/charts/tables could also be shown here whichever are relevant.</li> </ul>
<b>SLIDE 9</b>	<p><b>CONCLUSION:</b></p> <ul style="list-style-type: none"> <li>i. The conclusion should show clearly if the aim and objectives of the project have been achieved.</li> </ul>
<b>SLIDE 10</b>	<p><b>ORIGINALITY/INNOVATION/SOLUTION OF PRODUCT:</b></p> <ul style="list-style-type: none"> <li>i. State in points how the product/innovation displays complete originality, the solution is fundamentally distinctive from existing approaches and</li> <li>ii. demonstrates proven ability to impact the problem in a new way.</li> <li>iii. The market potential of the product/innovation.</li> </ul>
<b>SLIDE 11</b>	<p><b>RECOMMENDATION:</b></p> <p>State recommendations that would be helpful to further enhance the project for a beneficial contribution in the future.</p>
<p>The explanation for <b>SLIDE 3 and SLIDE 4</b> should be supported with few reliable resources that show the validity and significance of the issues(s)/problem(s) that leads towards the importance of conducting the intended FYP.</p>	



**JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI**

GALERIA PJH ARAS 4-7,

JALAN P4W PERSIARAN PERDANA PRESINT 4

62100 PUTRAJAYA

TEL: 03 8891 9000 FAKS: 03 8891 9300

[www.mypolycc.edu.my](http://www.mypolycc.edu.my)

