FACULTY OF ELECTRICAL ENGINEERING
FINAL YEAR PROJECT GUIDELINES

1.0 Definition

The Final Year Project (FYP) is a subject that must be completed by final year students as a partial requirement to receive the bachelor of engineering degree. Students will be given two semesters to solve a particular task/problem related to their field of interest that will require critical thinking and creative/innovative engineering activity. Students are expected to do their work independently and their progress will be monitored closely by a lecturer who acts as a project supervisor. Continuous assessment is carried out including work progress evaluation, logbook and seminar. At the end of each semester of their final year, a report based on the FYP must be submitted.

2.0 Aim

The aim of the FYP is to give students opportunity to apply and practice their theoretical knowledge in solving real engineering problem that requires analytical and/or design and/or experimental effort. FYP provides an important platform for students to plan and carry out an engineering project using available resources within a given time frame. It is hoped that the students can develop their problem-solving skills thus when they graduate, they will be ready to work as reliable and productive engineers.

3.0 Objectives

At the end of the FYP1, students should be able to:

i. Articulate and utilize academic and practical experiences in carrying out engineering projects.
ii. Encourage multidisciplinary research through the integration of subject learned in a number of courses.
iii. Develop problem solving, analysis, synthesis and evaluation skills.
iv. Convey their findings and ideas effectively in oral and written forms.

At the end of the FYP2, students should be able to:

i. Apply creative and innovative thinking when solving an engineering problem systematically.
ii. Foster collaborative learning skills.
iii. Perform relevant work independently when working in a project.
iv. Showcase the prototype or a working model of electrical and electronic engineering projects.
v. Convey their findings and ideas effectively in oral and written forms.

4.0 Types of FYP

Normally, FYP for engineering students can be classified into the following categories:

i. **Project involving hardware**
is project will focus on the design of a particular hardware that meets particular standard or technical requirements. At the end of the FYP, the students will have to produce the completed hardware or structure that is under study.

ii. **Project involving software**
This project focuses on the development of a software/code for embedded system devices or simulation work to investigate a scenario on various parameters. At the end of the project, students will have to demonstrate the completed software code or the programming scripts and show how it meets the objectives specified.

iii. **Project involving research**
This project focuses on the study of a particular phenomenon or characteristics of an event, process, or structure/hardware. The outcome of this project will be in the form of data, observation and conclusion that can be made on the subject under study.

5.0 FYP Conduct

All activities related to the overall conduct of FYP in the Faculty of Electrical Engineering will be handled by the FYP Committee (FC). The members of this committee are selected by the Academic Committee, Faculty of Electrical Engineering (FKE), UTM.

5.1 FYP Committee (FC)

This committee consists of an FYP coordinator as a chairperson and program representatives who are responsible to the Academic Committee regarding all matters related to:

i. Executing the FYP policy according to the university requirements;
ii. Delegating and assigning FYP supervision and FYP seminar panel members to all lecturers;
iii. Monitoring the FYP quality;
iv. Monitoring and moderating FYP evaluation and marks; and
v. Suggesting relevant FYP topics to the departments.

5.2 FYP Supervisor

The FYP supervisor will be selected from lecturers with relevant expertise in the Faculty of Electrical Engineering (FKE) by the FC.

The responsibility of a FYP supervisor includes:

i. To prepare and agree on the title of project;
ii. To set the objectives and scopes of work;
iii. To provide guidance and advice on project throughout two semesters;
iv. To monitor and evaluate the progress of work;
v. To guide on the report writing following the university format requirement;
vi. To ensure the students understand the implication of plagiarism and other unbecoming academic practices;
vii. To be responsible to the FC and consequently to the FKE Academic Committee.

5.3 Supervisor Assignment Procedure

The students' distribution to supervisors will be based on the area selection of student to the field of expertise of lecturer. For example, a student under the SKEE program may be assigned to a supervisor from the field of Electrical Power Engineering.

Area Selection Form (FYP 1-0 form) can be found and accessed via FKE FYP website. *The students must fill up this online form during the first FYP briefing session*, which will be conducted normally at the end of the semester 6 (2nd semester of Year 3).

If the FYP 1-0 form is not submitted, no supervisors will be assigned to the student. The student will then have to officially delete their registration of the FYP from their list of courses in the semester. Failure of doing so will cause the student to receive the failure grade (E).

Students will be assigned to one supervisor according to their selected field of interest within their program of study. As soon as the 'Student-Supervisor' list has been posted on the official website, students are advised to meet their respective supervisors as soon as possible to discuss on a project topic.

Students are not allowed to change their supervisors without the approval of the FC Chairperson. Students who change supervisors without the written permission will receive the failure grade (E).

5.4 Logbook

Students are required to use this logbook throughout the duration of the FYP. This book must be filled in as the project is going on. Other relevant findings and activities also must be recorded weekly and then presented to their supervisors to

be graded later (refer to FYP Action Plans). Among the relevant information to be recorded include:

i. Project title, objectives, scope and work plan;
ii. Project progress;
iii. Project preparation, problems and suggested solutions;
iv. Relevant references from journals, websites, books etc. Details regarding these references must be written completely;
v. Equipment used including circuit or schematic diagrams;
vi. Suggestions, assignment and discussions results from supervisors; and
vii. Summary of any relevant work that has been done.

The students' activities as recorded in their logbook represent the state of the completion of the FYP. Supervisors are required to verify and grade the log entries at every student-supervisor meetings. A minimum of seven (7) meetings is normally done every semester (once every two weeks).

5.5 Plagiarism

Plagiarism is a serious academic offence. Therefore, for quality assurance purposes and to deter students from committing plagiarism, all reports submitted for evaluation must go through plagiarism check by FYP supervisors via ***Turnitin***. In the event that plagiarism is present in work submitted by the students, supervisors may demand corrective action or report the matter to the FC and FKE Academic Disciplinary Committee, depending on the gravity of the offence.

5.6 FYP Structure

5.6.1 Registration

Final year students (who completed all core courses or attained minimum 90 credits) are required to register FYP1. Students must register FYP2 in the following semester (i.e. not allow to withdraw FYP2) except with the approval of the FKE Academic Committee. The subject code for FYP1 is SKE* 4812 and FYP2 is SKE* 4824, with the total of **6 credit hours**. Students are not allow to repeat grade for FYP1 or FYP2.

5.6.2 Project Duration

FYP1 and FYP2 must be done in **two consecutive semesters** (no rest semester is allowed) under the same project title. Students must not change their project title unless failed FYP1 and with the approval of FC Chairperson.

5.6.3 Passing Requirements

Students must complete **all assessment criteria** (refer details at subsect. 5.7 & 5.8). All submitted reports must pass the plagiarism check (similarity index <40%) via *Turnitin*. Students who are found guilty of plagiarism may face serious penalties imposed by the FKE Academic Disciplinary Committee.

5.7 FYP1 Assessment Criteria

5.7.1 Project Progress and Logbook

There are three stages of project progress evaluation in FYP1, which are the Problem Identification (FYP1-1), Research and Analysis (FYP1-2) and Solution Development (FYP1-3). By showing the progress done throughout the semester, supervisor will be able to track the project progress by the students. Supervisors must verify the log entries in the logbook and give marks using the online evaluation forms.

5.7.2 Seminar

FYP1 seminar provides the students an opportunity to present their project proposal. Generally, the presentation should consists of the project background, scope and objectives, proposed solution, work plan, preliminary results and expected outcomes. This allows the students to receive initial feedbacks from the seminar panels in terms of the appropriateness of their work for the FYP. This will help them to identify problems that they might encounter at a later stage of the project and possible solutions as suggested by the panels. Students who fail to present at the seminar without permission will be given a fail grade (E).

5.7.3 Report

At the end of the semester, students must submit two copies of FYP1 report. The report must follow UTM Thesis format manual and has *Turnitin* similarity index less than 40%. The report will be evaluated by the supervisor and an appointed internal examiner. Student who fail to submit report will be given a fail grade (E).

5.7.4 Grading

The Final Year Project 1 marks will be based on the following:

Progress Evaluation 1 (Week 5):	10%
Progress Evaluation 2 (Week 9):	10%
Progress Evaluation 3 (Week 12):	10%
Seminar (Week 14):	30%
Logbook:	10%
FYP1 report (supervisor):	15%
FYP1 report (internal examiner):	15%

Please refer to FYP1-1 to FYP1-6 forms for detail rubric assessment.

5.8 FYP2 Assessment Criteria

5.8.1 Project Progress and Logbook

There are three stages of project progress evaluation in FYP2, which are the Data Collection (FYP2-1), Data Analysis (FYP2-2) and Project Management and Costing (FYP2-3). Students must continuously record their progress using the same logbook. Supervisors must verify the log entries in the logbook and give marks using the online evaluation forms. For those who did not perform, the

supervisor has the right to exempt them from presenting their project at the FYP2 seminar.

5.8.2 Seminar and Demonstration

Students are required to present their FYP project to a panel of evaluators in the FYP2 seminar. Generally, the presentation should give an overall view of the project and the findings or results. Among the relevant things to include are:

i. Problem statement
ii. Design methods used to solve the problem
iii. Discussions on results obtained
iv. An observation on whether the solutions obtained satisfies the project objectives with creativity and innovations
v. An observation on whether the project design considers the societal problem of public health, cultural or the environment
vi. An elaborate analysis of the results by comparing with other published results
vii. Conclusions and further works

The panel of evaluators has the right to give a ceiling grade to the student if the student did not achieve a certain performance level. After the presentation, the students will be allowed to demonstrate their project outcome or product to the panel of evaluators.

5.8.3 Report

At the end of the semester, students must submit two copies of FYP2 report draft to be evaluated by the supervisor and internal examiner. The report must follow UTM Thesis format manual and has *Turnitin* similarity index less than 40% for literature review chapter and overall report. The draft may be loosely bound (ex. using spiral binding). Student who fail to submit report will be given a fail grade (E).

Students must submit **two copies** of hard cover FYP2 report to the Faculty of Electrical Engineering that is permanently bound after final correction is made based on the supervisor's recommendation. Two softcopies of report (in CD) together with the report checklist form (FYP2-8) must also be submitted. The declaration of report must use the written signature of the project supervisor. Report found with digital signature will be given a fail grade (E). *Failure to submit the hardbound report will cause the grade to be withhold or the student may receive the incomplete status (TS) for FYP2.*

5.8.4 Grading

The Final Year Project 2 marks will be based on the following:

Progress Evaluation 1 (Week 5):	10%
Progress Evaluation 2 (Week 9):	5%
Progress Evaluation 3 (Week 12):	10%
Seminar and Demonstration (Week 14):	35%
Logbook:	10%

FYP2 report draft (supervisor):	15%
FYP2 report draft (internal examiner):	15%

Please refer to FYP2-1 to FYP2-6 forms for detail rubric assessment.