

Subject Description Form

Subject Code	EIE3360
Subject Title	Integrated Project
Credit Value	3
Level	3
Pre-requisite	ENG2002 Computer Programming
Co-requisite/ Exclusion	Nil
Objectives	At a mid-stage of the programme, this subject plays the role of applying knowledge acquired in other subjects in an integrated manner. While the emphasis will be placed on the technical challenges that may encompass system integration, software development and troubleshooting, students will also be given opportunities to face various non-technical difficulties behind the development of multimedia/information systems.
Intended Subject Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <p><u>Category A: Professional/academic knowledge and skills</u></p> <ol style="list-style-type: none"> 1. Design effective and reliable software programs to achieve the objectives of a project. 2. Critically evaluate the different alternatives and strategies when implementing a project. 3. Apply higher-order thinking skills and knowledge from other subjects in an integrated manner to implement a project. <p><u>Category B: Attributes for all-roundedness</u></p> <ol style="list-style-type: none"> 4. Self-improvement in the context of interpersonal skills and recognising life-learning. 5. Plan, manage and evaluate the learning in pursuit of self-determined goals. 6. Present ideas and findings effectively. 7. Work in a team and collaborate effectively with others.
Subject Synopsis/ Indicative Syllabus	<p>Syllabus / Operation:</p> <p>The project(s) shall be of software development in nature with defined milestones (or Subtasks). The scope will include multimedia and network system design but does not exclude the possibilities of extending into areas such as computer animation or image processing. Students need to work in groups of two or three. Each Subtask needs to complete in a certain period. Functional Demonstrations and Progress Reports measure the project. Upon completing the project, each group needs to have a demonstration/presentation of the completed system and submit a Final Report. Students are required to individually keep a Logbook on the work performed during the entire period. The logbooks are to be evaluated on a more frequent basis. At the end of the project, the logbooks will be collected and graded.</p> <p>Lectures:</p> <p>Lectures are to be conducted at the beginning of the semester. During these lectures, the instructor shall give clear explanation on the functional and technical requirements, with a schedule for submitting deliverables. Concepts specific to the project(s), which are not yet learnt by the students, are to be covered in these lectures. Concepts behind critical use of tools and equipment will also be strengthened. Copies of supplementary/reference material will be distributed, or, links to on-line material will be provided for self-paced learning.</p>

Guided In-class Exercises/Tutorials/ /Laboratory Experiments:

The project requires the students to learn to use specific tools and/or equipment. The demonstrations and exercises will be arranged in the early weeks. Below are some examples:

1. Use of project-specific development tools, software and hardware.
2. Implementation of the basic framework of the project.
3. Software techniques to optimize the performance of the system.

Self-Paced Work:

Multiple tutorials and laboratory sessions will be scheduled to cater to self-paced work in the laboratory to ensure the students are working in a correct direction and defined milestones are given in the course of their work. Students are required to demonstrate their works at each milestone to show their progress.

Teaching/ Learning Methodology

Teaching and Learning Method	Intended Subject Learning Outcome	Remarks
Lectures	1, 2, 3	<ol style="list-style-type: none"> 1. Principles and key concepts of the multimedia platform used in the project are explained to students. Uses of tools are demonstrated. 2. The goals are specified. The various problems to be encountered are explained.
Tutorial/In-class exercises	2, 3	<ol style="list-style-type: none"> 1. Students review the basic knowledge of object-oriented programming. 2. Students will learn basic C# programming to build a simple application.
Laboratory	2, 3	<ol style="list-style-type: none"> 1. Students will learn to use the provided software modules and expand them to accommodate new functionalities. 2. Students will develop a software controller to trigger the event handler. 3. Students need to present ideas and findings through the reports.
Extended self-paced laboratory work	2, 3, 4, 5, 6, 7	Students need to work in teams of two or three to construct a multimedia application. They learn to use the provided software modules and expand them to accommodate new functionalities.
Logbooks	5	Students describe the project progress through the logbooks.
Project Proposal	1, 2, 6, 7	<ol style="list-style-type: none"> 1. Students present ideas and evaluate the different

		alternatives to compose the project proposal. 2. Students work as a team to collaborate on the project idea.
Preliminary Project Demo	3, 4, 6, 7	Students need to illustrate the project progress through the preliminary demo.
Final Project Demo	3, 4, 6, 7	Students demonstrate the final application and indicate the project achievement.
Final Report	1, 5, 6, 7	Students require to present the findings, resources management, project achievement, workload distribution, and resolved problems in the final report.
Peer Review	5, 6, 7	Students need to evaluate teammates' performance during preliminary and final project demonstrations using the teamwork performance system.

Assessment Methods in Alignment with Intended Subject Learning Outcomes	Specific Assessment Methods/ Task	% Weighting	Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)						
			1	2	3	4	5	6	7
	Continuous assessment	100%							
	• Tutorials/in-class exercises	10%		✓	✓				
	• Lab exercises/demo and reports	10%		✓	✓				
	• Project proposal, final report and project presentation	25%	✓	✓			✓	✓	✓
	• Preliminary demonstrations	15%			✓	✓	✓	✓	
	• Final demonstrations	30%			✓	✓	✓	✓	
	• Logbooks and peer review	10%					✓	✓	✓
	Total	100%							

Assessment on individual student's ability and contribution will be conducted, according to the attributes detailed below.

- INSIGHT as evidenced by how well the concepts are understood
- CREATIVITY as evidenced by ingenuity and imagination
- WORKMANSHIP as evidenced by how well ideas are implemented and how problems are resolved
- DRIVE as evidenced by initiative, diligence and tenacity
- COMMUNICATION as evidenced by an ability to express ideas clearly and succinctly
- MANAGEMENT as evidenced by how time, manpower and other resources are effectively used

At the completion of each subtask, team members need to have demonstrations with the assessor. Based on the presentation and response to questions addressed to the members, the assessor will rate each member's contribution, achievement, and performance.

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Specific Assessment Methods/Tasks	Remark
Lab Reports	To measure the students' understanding of the theories and concepts as well as some practical issues in their subject materials.
Preliminary and Final Demonstrations	<ol style="list-style-type: none"> 1. Students need to think critically and creatively to come up with reasonable alternate solutions for an existing problem. 2. Each group member will have an oral examination of the approach taken to evaluate his/her contributions, technical knowledge and communication skills.
Proposal, Logbook, Reports and Peer Review	<ol style="list-style-type: none"> 1. Each group of students is required to produce a project proposal and a final report. 2. Each group needs to explain the solutions in both proposal and the final report to describe how the limited resources are used in the project, how the team members work together to achieve the project goal, and why the reason behind choosing such solutions. 3. Logbooks and peer review are assessed to evaluate contributions and the quality of records on the progress.

Student Study Effort Expected	Class contact (time-tabled):	
	• Lecture	12 Hours
	• Tutorial and Laboratory	12 Hours
	• Mini-project presentation / demonstrations	12 Hours
	Other student study effort:	
	• Revision	12 Hours
	• Additional laboratory work	12 Hours
	• Mini-project work / presentation / proposal and report writing	45 Hours
	Total student study effort:	105 Hours
Reading List and References	Reference Books: <i>To be specified by the subject lecturer for each project.</i>	
Last Updated	June 2022	
Prepared by	Dr Doris Lin	