Title (Units): **COMP4878 Innovative Computing Project I (3,0,9)**

Course Aims: To enable students to demonstrate an integrated understanding of software system principles and techniques through solving a real-life problem; to enable students to gain practical experiences of developing and applying enabling computing technologies; to enable students to acquire independent and creative problem solving skills as well as oral and written communication skills.

Prerequisite: Year IV Standing in Computer Science

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Integrate software system principles and techniques
2	Gain practical experiences of developing and applying enabling computing technologies
	Transferable Skill
3	Solve practical problems independently via IT innovation in a systematic way
4	Demonstrate organizational and time-management skills
5	Write technical reports and make effective presentations
	Attitude
6	Develop professional attitude towards the development of a software system

Calendar Description: Students will engage in a highly independent problem solving activity under the supervision of a faculty member. Students are expected to gain practical experiences of applying software systems principles and techniques acquired from the Programme to the solution of a real-life problem. The project demands careful planning and creative applications of underlying theories and enabling technologies. A final report and an oral presentation are required upon successful completion of the project.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-6	Students will engage in a highly independent problem solving activity under the supervision of a faculty member

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Continuous Assessment	30%	1-6	This category covers the assessment of the attitude of the student, the amount of effort the student has put into the project, self-discipline, creativity, and the general skills in the project development process. The progress reports are also assessed in this category.
2	Thesis	50%	1-5	The grade for this category reflects the quality and the amount of completed work that includes the project report and, if any, the system. Efficiency and robustness of the solution will be graded in this category. This category also assesses the presentation of the report. The student is expected to show a clear understanding of the problem, the techniques to solving the problem, and the results of the project.
3	Oral Presentation	20%	5	This category includes an oral presentation of the project and a demonstration if applicable.

				Communication and presentation skills are emphasized.

Assessment Rubrics:

Excellent (A)	• Achieve the first five CILOs, demonstrating an excellent mastery of problem solving, report writing and oral presentation skills • Demonstrate an integrated understanding of various software system principles and techniques, and innovatively apply them to solve sophisticated real-life problems • Organize the system development tasks in different phases with detailed plans and always complete the tasks effectively as planned • Able to fully document the project with high-quality presentation of materials, ideas and results, and highlight student's own contribution to the project with solid rationales • Able to present the project orally with accurate and sound explanations, possibly accompanied with well-prepared system demonstrations
Good (B)	• Achieve the first five CILOs, demonstrating a good mastery of problem solving, report writing and oral presentation skills • Demonstrate an integrated understanding of software system principles and techniques, and effectively apply them to solve new real-life problems • Organize the system development tasks in different phases with plans and mostly complete the tasks effectively as planned • Able to mostly document the project with good-quality presentation of materials, ideas and results, and highlight student's own contribution to the project with proper rationales • Able to present the project orally and visually with clear explanations, possibly accompanied with sufficient system demonstrations
Satisfactory (C)	• Achieve most of the first five CILOs, demonstrating a moderate mastery of problem solving, report writing and oral presentation skills • Demonstrate an integrated understanding of some software system principles and techniques, and apply them to solve familiar real-life problems • Plan and organize the system development tasks in different phases and moderately complete the tasks • Able to adequately document the project with quality presentation of materials, ideas and results, and highlight student's own contribution to the project • Able to present the project orally and visually for the most part, possibly accompanied with adequate system demonstrations
Marginal Pass (D)	• Achieve most of the first five CILOs, demonstrating a minimal level of mastery of problem solving, report writing and oral presentation skills • Demonstrate a basic understanding of some software system principles and techniques, and apply them to solve simple real-life problems • Have a plan for the system development tasks and complete a limited number of tasks • Document the project with minimal presentation of materials, ideas and results

	• Able to make oral presentation and system demonstration (if applicable) of the project for a limited part
Fail (F)	• Achieve less than three of the CILOs, and demonstrating little mastery of problem solving, report writing and oral presentation skills • Have little understanding of software system principles and techniques, and have difficulty in applying them to solve real-life problems • Have no plan for the system development and fail to develop a workable system • Have no or minimal documentation of the project • Unable to make oral presentation or system demonstration of the project

Course Content and CILOs Mapping:

Content		CILO No.
I	Project	1 - 6

References:

- Literature research appropriate to the topics under study

Course Content:

Topic

I. Project