Subject Description Form

Subject Code	DSAI4901
Subject Title	Capstone Project
Credit Value	6
Level	4
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This subject is to foster the students' initiative and capability in applying theoretical principles, in organizing and executing the work and in presenting the methodology, arguments and findings in a well-documented report. It provides the opportunity for students to explore their own capabilities of working independently on some substantial problems.
Intended Learning Outcomes *(Note 1)*	Upon completion of the subject, students will be able to: a. Carry out their own study and learn independently for problem solving and solution seeking; b. Combine knowledge and techniques from multiple disciplines to develop mathematical and statistical models for real-world investment and finance challenges, while critically evaluating the suitability of different models. c. Apply interdisciplinary knowledge and techniques to analyze real-world datasets, and critically evaluate the appropriateness of the analysis methods employed. d. interpret analysis results and make recommendations for actions based on analysis results; e. write well-structured report for analysis results and present analysis results effectively.
Subject Synopsis/ Indicative Syllabus	Students will initiate the project by themselves. They are normally expected to contact local industry for real-life problems and together with the supervisor to materialize them into project topics. The nature of the project should be applied through theoretical research with practical prospect. The project should contain a fair amount of effort in analyzing and interpreting the data/information obtained, using the principles and techniques learnt from various related subjects. A project proposal will be required that students will identify the theme of study, suggest the plan of collecting data/information and propose the methodology of analyzing problem with justification. Oral presentation sessions will be arranged for students to report their work and findings.

Teaching/Learning Methodology	The capstone project spans across the academic year for two consecutive semesters. The teaching/learning activities include regular project meetings with the supervisor and/or other involved parties, guided study of project materials, independent project development work and other project management tasks.
	While the basic knowledge and techniques are learned via various subjects, students are required to learn some specific techniques by themselves independently with minimum guidance from the supervisor.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
		a	b	c	d	e
1. Interim Report	25%	✓	✓	✓		
2. Final Report	50%	✓	✓	✓	✓	✓
3. Oral Presentation	25%	✓	✓	✓	✓	✓
Total	100 %					

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

The capstone project will be accessed by the supervisor and other assessors. Attributes to be assessed include, but not limited to, Problem Identification, Problem Solving, Communication and Presentation, Project Management, and Self-Discipline.

Capstone Projects should be problem-oriented and there is no restriction to the nature of the problem except that it should be relevant to the student's study programme. The project could be practical, academic or a hybrid in which the student is encouraged but not constrained to have some original contributions. Each student has to submit a proposal, an interim report and a final report.

The proposal must be approved by the supervisor before the student can proceed to the capstone project. An oral presentation and demonstration are essential at the end of the project. An interim report is required for proper continuous assessment.

Student Study Effort Expected	Class contact:	
	▪ Consultation	52 Hrs.
	Other student study effort:	
	▪ Searching and reading materials, meeting with supervisor / others, design and system development, testing, documentation, presentation, etc.	158 Hrs.
	Total student study effort	210 Hrs.
Reading List and References	• Statistics, simulation, programming, and relevant books. • ACM and IEEE magazines, Transactions and Journals. • Other International Journals. • Relevant conference proceedings and magazines (including ACM and IEEE conferences). • Technical reports from universities and major companies.	