CS6538: RESEARCH/INTERNSHIP PROJECT

Effective Term
Semester B 2025/26

Part I Course Overview

Course Title
Research/Internship Project

Subject Code
CS - Computer Science
Course Number
6538

Academic Unit
Computer Science (CS)

College/School
College of Computing (CC)

Course Duration
Non-standard Duration

Other Course Duration
One Semester (To undertake a research internship in Hong Kong/Dongguan or other approved locations)

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Students should have completed at least 24 credit units (including all required courses) for the MSEC programme or at least 21 credit units (including all required courses) for the MSCS programme

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
CS6520 Project or CS6521 Research/Internship or EC6001 eCommerce Project

Part II Course Details

Abstract

This course aims to provide an opportunity for students to explore individually an area of computer science of their own choice. It allows students to develop their skills and knowledge further in the area of interest. It provides the context for students to demonstrate their ability to integrate specialized knowledge that they have acquired in other preceding and concurrent courses of study and apply them to solve an advanced problem with a working solution.

Students are given an opportunity to work in an industrial setting by undertaking a research internship in Hong Kong/ Dongguan or other approved locations, under the joint supervision of a CityUHK faculty member and research supervisor at the host organisation.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify a challenging computer related problem, analyze the problem in detail; and propose innovative solutions through computing means.		x		
2	Provide a proof-of-concept for the solution by designing and developing a working system or application.			x	x
3	Implement and evaluate the developed system or application to match the initial system requirements.				x
4	Document and report the system design process, study, implementation and evaluation findings using different communication media.				x
5	Identify and integrate academic skills and knowledge in a research work environment.			x	x
6	Demonstrate the ability to conduct research independently, collaboratively, and professionally.		x	x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Project planning	Students will engage in identifying problems for investigation and drafting a project plan with appropriate milestones.	1	
2	Project proposal	Students will engage in analyzing the problem identified and researching on existing and/or related solutions. Then, in consultation with their supervisors, they will develop their own designs and solutions.	2	
3	Project implementation and evaluation	Students will participate in implementing the proposed solutions and validating their designs by testing and evaluating the completed solution.	3	
4	Project documentation	Students are required to produce regular progress reports and final report as an integral part of the project documentation. At the end, they are required to present their projects in the form of oral presentation and demonstration.	4	
5	Throughout the research internship	Regular communication with the faculty supervisor for guidance and support.	5	
6	Throughout the research internship	Supervision and periodic feedback from the research supervisor.	6	

Additional Information for LTAs

Teaching pattern:
Suggested lecture/tutorial/laboratory mix: 8 hours individual consultation per semester.

The course is designed to guide students in proposing and managing their own projects. Each student will find an academic staff to supervise the project on a one-to-one basis.

The role of the supervisor is to closely monitor the project progress with project meetings regularly, in order to give advice to the student, to establish criteria for assessment, and to advise on possible solutions and potential problems at an early stage. In particular, the supervisor is expected to encourage the student to explore innovative approaches and alert the student to the possibility of alternative and novel solutions to the problems encountered. In addition, the supervisor is also expected to provide advice for the research internship of the student.

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Project management and individual development of the student	1	10	For assessment of technical merit, report, and presentation, the project committee assigns two examiners, including the supervisor. The Supervisor is required to provide detailed information on all aspects of assessment. The Assessor will evaluate the CILOs 2-4 of the project. The Course Leader will review all projects, moderate consistency across a wide range of projects, and, where necessary, resolve discrepancies between grading of the Assessor and the Supervisor, drawing on the expertise of domain experts as needed.	Yes
2	Technical merit of the proposed solution, including the degree of innovation in the proposed design or solution	2, 3	50	-	Yes
3	Standard of final documentation	4	20	-	Yes
4	Standard of oral presentation	4	10	-	Yes
5	Actual research internship	5, 6	5	-	Yes
6	Feedback from the research supervisor and faculty supervisor	5, 6	5	-	Yes

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

1. Project planning

Criterion

1.1 ABILITY to IDENTIFY problems for investigations.
1.2 ABILITY to PLAN a project schedule with appropriate milestones, and MAINTAIN the project schedule.

Pass (P)

Satisfactorily attaining the specified criteria

Failure (F)

Not even reaching marginal levels

Assessment Task

2. Project proposal

Criterion

2.1 ABILITY to ANALYZE a problem.
2.2 ABILITY to EVALUATE, COMPARE, and CONTRAST existing solutions.
2.3 ABILITY to DESIGN and INNOVATE new solutions.

Pass (P)

Satisfactorily attaining the specified criteria

Failure (F)

Not even reaching marginal levels

Assessment Task

3. Project implementation and evaluation

Criterion

3.1 ABILITY to IMPLEMENT the proposed solution.
3.2 ABILITY to VALIDATE and TEST the implemented solution.
3.3 ABILITY to EVALUATE and INTERPRET results from the design, and COMPARE with existing solutions.

Pass (P)

Satisfactorily attaining the specified criteria

Failure (F)

Not even reaching marginal levels

Assessment Task

4. Project documentation

Criterion

4.1 ABILITY to DOCUMENT the progress of the project in interim reports.
4.2 ABILITY to DOCUMENT the OUTCOMES of the project in a final report.
4.3 ABILITY to DEMONSTRATE project outcomes in an oral presentation.

Pass (P)

Satisfactorily attaining the specified criteria

Failure (F)

Not even reaching marginal levels

Assessment Task

5. Research Work

Criterion

5.1 ABILITY to CONDUCT research in an industrial setting to fulfil the requirements as prescribed by the research supervisor.
5.2 ABILITY to DEVELOP a range of communication and soft skills and cross-cultural awareness to perform effectively in a research team.
5.3 ABILITY to REPORT and REFLECT on the learning experience.

Pass (P)

Satisfactorily attaining the specified criteria

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

The Project has no fixed formal syllabus. Each student will be required to undertake an individual piece of work, which is related to the computing areas. The topic area of the dissertation will be chosen so that the aims of the Project can be achieved. Criteria for topic choice include: (i) compatibility with a subject area of Computer Science, (ii) availability of a qualified supervisor; (iii) appropriate academic level; (iv) availability of necessary specialized resources. Topic areas include: Computer Networks, Distributed Systems, Software Engineering, Data Engineering, Performance Evaluation, Multimedia Systems, Artificial Intelligence, Algorithms, Programming Languages, Information Security, Pervasive Computing, Bioinformatics, Data Science, Machine Learning, Cloud Computing, Evolutionary Computing, Mobile Computing, Embedded Systems, Computer Graphics, Computer Vision.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Nil