

CHEM4088: ENTREPRENEURSHIP PROGRAMME IN CHEMISTRY 2

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Entrepreneurship Programme In Chemistry 2

Subject Code

CHEM - Chemistry

Course Number

4088

Academic Unit

Chemistry (CHEM)

College/School

College of Science (SI)

Course Duration

Two Semesters

Credit Units

0-6

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

CHEM2073 Entrepreneurship Programme In Chemistry 1

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course allows the highly motivated students of Entrepreneurship Programme In Chemistry 1 (EPIC1) to test, optimise and extend their original ideas in the laboratory. In this highly personalised and research-based course, the students will be assigned to a research lab in the Department of Chemistry, where they will learn laboratory skills necessary for the developing of their technologies and learn how to keep legitimate record of their research and development. The goal of this course is to generate advanced drafts of a patent application and a business proposal. Further disseminations of the research data produced in the course will be considered on a case-by-case basis.

The overarching aim of EPIC 1 and 2 is to provide students with a structured guideline towards entrepreneurship, by breaking down this intimidating and precarious journey into smaller, bite-size stages, with guidance and support from specialists in the field at each step.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Develop one original idea for a new chemistry-related product or technology, and analyse the market demand and existing competitions for this idea.	10		x	
2	Critically evaluate the literature relevant to the invention or idea developed in CILO1, in order to identify and design experiments needed for testing and optimising the invention or idea.	10		x	x
3	Develop the appropriate laboratory skills and instrumentation(s) to undertake the experiments in CILO1.	15		x	x
4	Analyse and critically evaluate the data collected in CILO2.	15		x	x
5	Using the data generated in this course, compose an advanced draft of a patent application based on the format of a Hong Kong short-term patent.	20	x		x
6	Deliver an oral presentation, in the format of a business pitch, on the research project, summarising the background, hypothesis being tested, methods involved, results obtained and the business potential of the project.	10	x		x
7	Based on the feedbacks from the business pitch, compose an advanced draft of a business proposal based on the format of Technology Start-up Support Scheme for Universities (TSSSU).	20	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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Library and web-based searching and literature review	Library and web-based searching of the literature, reading and interpretation of relevant patents and scientific literature, and assembly of a literature review, including the appropriate analysis of the legal and marketing aspects, relating to the invention.	1, 2	
2	Undertaking of suitable experiments	Learning the relevant experimental techniques, undertaking of suitable experiments and prototyping under supervision, and maintaining a log book of data collected from the process.	3, 4	
3	Writing	Writing, under supervision, a patent application and a business proposal based on the format of Technology Start-up Support Scheme for Universities (TSSSU).	4, 5, 7	
4	Oral presentation	Delivery of an oral presentation, in the format of a business pitch, of the project (10 min), followed by questions (5 min) from the audience.	4, 6	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Library and web-based searching and literature review	1, 2	10	
2	Undertaking of suitable experiments	3, 4	30	

3	Writing	4, 5, 6	40	
4	Oral presentation	7	20	

Continuous Assessment (%)

100

Examination (%)

0

Additional Information for ATs

Starting from Semester A, 2015-16, students must satisfy the following minimum passing requirement for courses offered by CHEM:

“A minimum of 40% in both coursework and examination components.”

Assessment Rubrics (AR)**Excellent (A+, A, A-)**

Student completes all assessment tasks/activities and can demonstrate excellent synthesis of the principles, characteristics, processes, methodologies, problems and limitations of the study related to various aspects of the project in detail. Provides a comprehensive analysis of the data with clarity of the explanations, logical and advanced justifications, and creative/personal interpretations and viewpoints. Shows evidence of critical evaluation of the impact and commercial potential of the findings, and originality in thought, argument or application with effective oral and written communication. Both the patent and business proposals could be submitted to the official bodies without major revisions.

Good (B+, B, B-)

Student completes all assessment tasks/activities and can describe and explain the principles, characteristics, processes, methodologies, problems and limitations of the study. Provides a detailed, critical analysis of the data, with accurate, clear explanations and fair justifications. Shows ability in integration of various sources of information to explain the impact of the findings via clear oral and written communication. The patent and business proposals could be submitted to the official bodies with some revisions.

Fair (C+, C, C-)

Student completes all assessment tasks/activities and can describe and explain some key elements in the principles, characteristics, processes, methodologies, problems and limitations of the study. Provides simple but accurate explanations and basic justifications of the data. Shows evidence of use of oral and written communication clearly. The patent and business proposals could be submitted to the official bodies with major revisions.

Marginal (D)

Student completes all assessment tasks/activities but can only briefly describe isolated elements of principles, characteristics, processes, methodologies, problems and limitations of the study. Demonstrates limited ability in analysis and justification of the data. Can communicate simple ideas accurately in writing and orally. The patent and business proposals could not be submitted to the official bodies.

Failure (F)

Student fails to complete all assessment tasks/activities and/or cannot accurately describe and explain relevant principles, characteristics, processes, methodologies, problems and limitations of the study. Cannot provide appropriate analysis and satisfactory justifications of data, and may show evidence of plagiarism or inability to communicate ideas.

Part III Other Information

Keyword Syllabus

Weeks 1-4: Idea development and market analysis.

Weeks 5-7: Literature review and experimental design.

Weeks 8-20: Conduct experiments and analyse data.

Weeks 21-24: Compose an advanced draft of a patent application based on the data collected in this course.

Weeks 24-26: Preparation of oral presentation and writing of business proposal based on the project conducted in this course.

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

Title	
1	Nil