CSCI2002: WORKSHOP ON RESEARCH METHODOLOGY

Effective Term
Semester A 2024/25

Part I Course Overview

Course Title
Workshop on Research Methodology

Subject Code
CSCI - College of Science
Course Number
2002

Academic Unit
College of Science (SI)

College/School
College of Science (SI)

Course Duration
One Semester

Credit Units
1

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

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

The course is designed for students enrolled in the Global Research Enrichment & Technopreneurship programme stream of the College of Science to train them in acquiring the necessary skills of practicing research scientists.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain the basis and importance of the various aspects of scientific research such as approaches and methodologies, ethical and legal issues, social implications, etc.	20	x	x	
2	Review and critique the body of knowledge from literature of the given subject area.	40	x	x	
3	Apply such knowledge to formulate the research methodology for a research project	40	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	Lectures	One-hour lectures on the following topics will be conducted: - What is scientific research - Ethical and legal issues on scientific research - Business opportunities and social implications on scientific research - Skills in writing research papers/reports	1	

2	Tutorials and case-studies	Tutorials and case-studies on the following topics will be conducted: - use of various online databases for scientific research, e.g. databases for literature search, software for reference & manuscript management, plagiarism checking etc., - use of selected software tools for scientific research - critical review of research publications - research proposal development	2, 3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	In-class group discussions	1, 3	20	
2	Tutorial assignments	2, 3	80	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

In-class group discussions

Criterion

Ability to apply basic knowledge and to discuss all the issues associated with scientific research with peers

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Below marginal level

Assessment Task
In-class group discussions

Criterion
Participation in in-class group discussions

Excellent (A+, A, A-)
All

Good (B+, B, B-)
All

Fair (C+, C, C-)
Most

Marginal (D)
Some

Failure (F)
Few

Assessment Task
In-class group discussions

Criterion
Attendance of lectures and tutorials

Excellent (A+, A, A-)
More than 90%

Good (B+, B, B-)
More than 75%

Fair (C+, C, C-)
More than 60%

Marginal (D)
Between 40% and 60%

Failure (F)
Less than 40%

Assessment Task
Tutorial assignments

Criterion
Completion of tutorial assignments

Excellent (A+, A, A-)
All

Good (B+, B, B-)

All

Fair (C+, C, C-)
Most

Marginal (D)
Some

Failure (F)
Few

Assessment Task
Tutorial assignments

Criterion
Capacity for self-directed learning to understand all the issues associated with scientific research

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Below marginal level

Assessment Task
Tutorial assignments

Criterion
Capability in the use of various databases and software tools for scientific research in his/her field(s) of study

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Below marginal level

Part III Other Information

Keyword Syllabus

Research Planning; Information Literacy; Literature Databases; Citation Management Tools

Reading List

Compulsory Readings

	Title
1	InfoLit for U (Focal Module & Science Module) – An UGC funded InfoLit Project https://openedx.keep.edu.hk/courses/course-v1:UGCULibs+IL1001+2022/about

Additional Readings

	Title
1	Yang J. T., An Outline of Scientific Writing for Researchers with English as a Foreign Language, World Scientific Publishing Co., Singapore, 1995.
2	Goodlad S., Speaking Technically: A Handbook for Scientists, Engineers and Physicians on How to Improve Technical Presentations, Imperial College Press, London, 1996.
3	Laursen S., Hunter A., Seymour E., Thiry H., Melton G., Undergraduate Research in the Sciences: Engaging Students in Real Science, John Wiley & Sons Inc., 2010.
4	Holtom D., Fisher E., Enjoy Writing Your Science Thesis or Dissertation! 2nd Ed., Imperial College Press, London, 2014