SEE8003: SKILLS FOR SCIENTISTS

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Skills for Scientists

Subject Code
SEE - School of Energy and Environment
Course Number
8003

Academic Unit
School of Energy and Environment (E2)

College/School
School of Energy and Environment (E2)

Course Duration
One Semester

Credit Units
2

Level
R8 - Research 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 aims to equip entry-level postgraduate students with the essential skills in conducting high-level research and developing their long term professional career. This includes the shaping of curiosity-driven research aptitude, the

ability to perform critical thinking and analyses, as well thinking-outside-the-box. It will also consider a range of important transferable skills that are required for careers in industry, government or academia.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Recognise, in a systematic manner various fundamental and curiosity-driven research skills: critical thinking, research methodology, computing, data collection, literature analysis key to developing academic research	30	x	x	x
2	Develop transferable skills in time management, leadership etc of relevance to scientists and future careers in industry, government or academia.	40	x	x	
3	Reflect on other research and career issues in a self-confident manner.	30	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	Lecture	Explain some of the key issues relevant to academic skills	1, 2, 3	1.5 hour/week
2	In-class tasks	Small exercises to complete and present	1, 2, 3	0.25 hour/week
3	Reflect on skills	Write as a short paragraph	3	1 hour/week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Reflection, In class participation	1, 2, 3	100	Pass/Fail- no weighting	No

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task
Short reflective reports on all classes

Criterion
Student is able to reflect on the relevance of communication in their own specialist discipline.

Pass (P)
(P) Adequate reflection

Failure (F)
(F) Inadequate reflection

Assessment Task
In-class participation

Criterion
Student is able to confidently present research topic and findings in a rational manner, and is able to provide constructive comments to others

Pass (P)
(P) Achieves the criterion - requires attendance at >80% of classes

Failure (F)
(F) Fails to attend >80% of classes

Part III Other Information

Keyword Syllabus
Nil

Reading List

Compulsory Readings

	Title
1	A range of on-line materials

Additional Readings

	Title
1	Nil