DSC6022: RESEARCH PROJECTS FOR ARTIFICIAL INTELLIGENCE FOR SCIENCES

Effective Term
Semester A 2026/27

Part I Course Overview

Course Title
Research Projects for Artificial Intelligence for Sciences

Subject Code
DSC - Data Science
Course Number
6022

Academic Unit
Data Science (DS)

College/School
College of Computing (CC)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
SDSC6022 Research Projects for Artificial Intelligence for Sciences

Exclusive Courses
Nil

Part II Course Details

Abstract

This course provides students with an opportunity to conduct research projects applying AI tools to solve real-world scientific problems. Building on coursework knowledge, students will develop abilities to integrate and apply AI techniques and computational skills in practical scenarios, demonstrate innovative thinking when addressing scientific challenges, and explore ethical and societal implications of AI in research. The course also serves as a platform for students to present and share novel AI-driven scientific investigations.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify and formulate a meaningful research problem in AI for sciences applications	20	x		
2	Apply appropriate AI techniques and computational methods to solve the problem	20	x	x	
3	Evaluate the effectiveness of AI solutions and examine ethical concerns in real-world contexts	20	x	x	
4	Interpret results to derive useful insights	20	x	x	
5	Communicate findings effectively through professional project report and presentation	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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Consultation	Students will consult their project supervisor through a series of consultation sessions to receive advice and feedback on their chosen project work. These sessions will cover problem formulation, data analysis, performance evaluation, ethical considerations, results interpretation, and report writing.	1, 2, 3, 4	13 hours/sem

2	Peer discussion	Each student will engage in discussion with group members to formulate the research problem for their project, identify data sources, propose and implement AI techniques, interpret results, and prepare report.	1, 2, 3, 4, 5	26 hours/sem

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Project Proposal	1, 2, 3	20	-	Yes
2	Project Milestone Meetings	1, 2, 3, 4	30	-	Yes
3	Final Report and Poster Presentation	2, 3, 4, 5	50	-	Yes

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

Project Proposal (for students admitted in Semester A 2026/27 & thereafter)

Criterion

20%

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Project Milestone Meetings (for students admitted in Semester A 2026/27 & thereafter)

Criterion

30%

Excellent

(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Final Report and Poster Presentation (for students admitted in Semester A 2026/27 & thereafter)

Criterion
50%

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus
This is a project-based course. It includes substantial academic content and requires students to apply their intellect through a wide variety of activities to develop practical and implementable solutions. Guest lectures on applications of AI for sciences may be arranged.

Reading List

Compulsory Readings

	Title
1	NIL

Additional Readings

	Title
1	NIL