MSc Artificial Intelligence – IC502 (Full-Time & Part-Time)

1. CONTEXT AND OBJECTIVES

Artificial intelligence (AI) enables computers and machines to perform tasks that normally require human intelligence. AI simulates human intelligence processes by combining large datasets, machine learning, and computational power with algorithms capable of solving problems. Its applications range from chess-playing robots and autonomous cars to speech, image, and language processing, robotic manufacturing and surveillance systems. This MSc Artificial Intelligence programme has been carefully designed to allow graduates to develop core data analysis skills and explore both traditional and state-of-the-art aspects of AI and machine learning. Moreover, this programme will be offered in a blended mode (modules will be offered as a combination of face-to-face and online mode). AI professionals are in huge demand in various fields such as agriculture, business, health, finance, transport, energy, software engineering and neuroscience.

The objectives of the programme are to:

- Provide a solid awareness of the key concepts of AI;
- Encourage graduates to explore the latest tools and techniques in this field;
- Provide graduates with the fundamental knowledge and practical skills needed to design, build, and apply AI systems for real-life applications through group and individual projects.

Competencies

After successful completion of this programme, graduates should be equipped with competencies in:

- Building applications using machine learning and data analytics;
- Developing software tools using advanced AI algorithms;
- Applying AI solutions to current issues in society/ IT sector and
- Starting their own ventures in AI.

2. LEARNING OUTCOMES

After successful completion of this programme, learners should be able to:

- Identify and apply the scientific, technological and ethical principles underlying Artificial Intelligence;
- Implement different approaches for data analytics in different industries;
- Experiment with specialist tools and techniques to develop AI-based systems and
- Develop practical machine learning models for different domains.

3. TEACHING AND LEARNING METHODS

The MSc AI programme consists of Teaching Contact Hours, Self-Study and Other Learning Activities. Teaching methods will include blended delivery (a combination of face to face lectures and online delivery), tutorials, or practical sessions.
Other Learning Activities may comprise of the following:

- Working on assignments;
- Preparation and sitting for Class Tests;
- Group work;
- Attending Workshops/Conferences recommended by the Department/Faculty;
- Fieldwork;
- Site Visits/Trips;
- Presentations among peers;
- Experiential Learning;
- Guest lectures.

4. ENTRY REQUIREMENTS

- **General Requirements**

  As per General Entry Requirements for Admission to the University for Postgraduate programmes.

- **Programme (Specific) Requirements**

  Any undergraduate degree in Computing or related areas. Other STEM graduates may be considered provided they have at least one year of relevant working experience in the field of IT.

5. PROGRAMME DURATION

The normal duration of the programme will be as detailed below.

	Full Time (years)	Part-Time (years)
Minimum	1	2
Maximum	2	4

However, students wishing to exit earlier, with a Postgraduate Diploma, can do so subject to their meeting the requirements specified in Section 6.

6. MINIMUM LCCS CREDITS REQUIRED FOR DEGREE AWARD:

- For Degree Award: 76 LCCS Credits
- For each academic year: As per the LCCS Credits per Semester/Year for Programmes of Studies abiding by semester regulations.

Exit points:

The student can exit the programme with a Postgraduate Diploma, as follows:

- Students can exit the programme with a Postgraduate Diploma after having earned 48 LCCS Credits

7. ASSESSMENT AND DEADLINES

All modules will be assessed fully by continuous assessment (e.g. assignment, presentation). The pass mark for a module in the programme is 50%.

Students will be required to keep track of all assignments completed in a portfolio to enable monitoring. This includes presentations, projects, portfolios, class tests.

Submission Deadlines for Project: As per the University regulations for the submission of dissertation for postgraduate programmes.

8. LIST OF MODULES

Module Code	Module Name	L*/T*/P* Contact Hours/Week	Self-Study Hours/ Week	Other Learning Hours/ Week	LCCS Credits
SIS 6116	Artificial Intelligence Principles	2 + 1 + 0	6	9	6
SIS 6117	Machine Learning	2 + 1 + 0	6	9	6
SIS 6118	AI Applications	2 + 1 + 0	6	9	6
SIS 6119	Agent- Based systems	2 + 1 + 0	6	9	6
SIS 6120	Data Analytics	2 + 1 + 0	6	9	6
SIS 6121	Research Methods	2 + 1 + 0	6	9	6
SIS 6246	Project	-	-	-	24

Practitioners' Seminars					
SIS 6221	Enterprise AI	1 + 0 + 0	2	3	2
SIS 6222	AI planning, Ethics and Society	1 + 0 + 0	2	3	2
Electives					
SIS 6223	**Elective 1** : Natural Language Processing	2 + 1 + 0	6	9	6
SIS 6224	**Elective 2** : AI in Computer Vision	2 + 1 + 0	6	9	6
SIS 6225	**Elective 3**: Robotic Process Automation	2 + 1 + 0	6	9	6

Note: Contact Hours = L*: Lectures + T*: Tutorials + P*: Practicals

Note:

1. *There will be 2 Practitioners' seminars, the first in AI Planning, Ethics and Society and the second in Enterprise AI.*
   These seminars shall be compulsory. As part of the assessment students will be required to submit a report of 2000 – 2500 words and to give oral presentations.

   Students will be assigned Grade "S" upon satisfactory attendance and performance in these workshops in order to pass the module.

2. *The Practitioners' Seminars may be offered in any semester depending on the availability of the resource persons.*

3. *The University reserves the right not to offer a given elective module if the critical number of students is not attained and/or for reasons of resource constraints.*

9. PROGRAMME PLAN

Full_Time

Semester	Module Code	Module Name	L*/T*/P* Contact Hours/Week	LCCS Credits
Semester 1	SIS 6116	Artificial Intelligence Principles	2 + 1 + 0	6
	SIS 6117	Machine Learning	2 + 1 + 0	6
	SIS 6118	AI Applications	2 + 1 + 0	6
	SIS 6119	Agent-Based systems	2 + 1 + 0	6
	SIS 6120	Data Analytics	2 + 1 + 0	6
	SIS 6121	Research Methods	2 + 1 + 0	6
Semester 2	SIS 6246	Project		24
	SIS 6221	Enterprise AI	1 + 0 + 0	2
	SIS 6222	AI planning, Ethics and Society	1 + 0 + 0	2
	Select any two Electives			
	SIS 6223	**Elective 1** : Natural Language Processing	2 + 1 + 0	6
	SIS 6224	**Elective 2** : AI in Computer Vision	2 + 1 + 0	6
	SIS 6225	**Elective 3**: Robotic Process Automation	2 + 1 + 0	6
Total:				76

Part- Time

Semester	Module Code	Module Name	L*/T*/P* Contact Hours/Week	LCCS Credits
Semester 1	SIS 6116	Artificial Intelligence Principles	2 + 1 + 0	6
	SIS 6117	Machine Learning	2 + 1 + 0	6
	SIS 6118	AI Applications	2 + 1 + 0	6
Semester 2	SIS 6119	Agent- Based systems	2 + 1 + 0	6
	SIS 6120	Data Analytics	2 + 1 + 0	6
	SIS 6121	Research Methods	2 + 1 + 0	6
Semester 3	**Select any two Electives**			
	SIS 6223	Elective 1 : Natural Language Processing	2 + 1 + 0	6
	SIS 6224	Elective 2 : AI in Computer Vision	2 + 1 + 0	6
	SIS 6225	Elective 3: Robotic Process Automation	2 + 1 + 0	6
Semester 4	SIS 6246	Project		24
Semester 1/2/3/4	SIS 6221	Enterprise AI	1 + 0 + 0	2
	SIS 6222	AI planning, Ethics and Society	1 + 0 + 0	2
Total:				76

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