



IBU International
Business
University

MSc in Applied Artificial Intelligence with Data Engineering



MSc in Applied Artificial Intelligence with **Data Engineering**

(4 Terms – 16 Months | 42 Credit Hours with Capstone Project Work)

Design and manage **data infrastructure** that powers intelligent systems and enables artificial intelligence to transform industries.

In this specialization, you learn to build secure and scalable data architectures, integrate machine learning models, and automate data-driven decision-making across organizations.

By combining advanced engineering, analytics, and AI strategy, the program equips you to bridge the gap between complex data systems and real-world innovation. You graduate ready to deliver the data ecosystem behind AI solutions.

Program Highlights	Program Length 4 Terms – 16 Months	Credit Hours 42 (including Capstone Project)
	Delivery In-person & Hybrid	Intakes September, January, May

Why Choose This Specialization?

- Master **data engineering, architecture, and big data analytics** for AI systems.
- Learn to design and manage **AI-ready data pipelines** using modern tools and platforms.
- Apply ethical and regulatory frameworks for responsible data management.
- Gain industry-relevant, **hands-on experience** through projects and a capstone.

Career Outcomes

- Data Engineer
- Machine Learning Engineer
- Big Data Specialist
- AI Solutions Architect
- Business Intelligence Manager

Curriculum Overview

Core Courses

- Fundamentals of Artificial Intelligence
- Machine Learning and Deep Learning (ML/DL)
- Data Science and Data Mining
- Applications of AI in Services
- Human–Computer Interaction (HCI) Design
- Data Engineering and Architecture
- Advanced Engineering for Data Analysis
- Artificial Intelligence and Cybersecurity
- Applied Research Methods
- Capstone Project

M-Management, S-Specializations, RM-Research Methodology, C-Communication, P- Professionalism, A-Application, L-Limitations

Curriculum	Course	Credit	M	S	RM	C	P	A	L	
Stage 1	Semester 1									
	Fundamentals of Artificial Intelligence	3	✓				✓		✓	
	Machine Learning and Deep Learning	3	✓		✓			✓		
	Data Science and Data Mining Techniques	3	✓		✓	✓				
	Human- Computer Interaction Design	3	✓			✓		✓		
Stage 2	Semester 2									
	Applications of Artificial Intelligence in Services	3			✓	✓		✓	✓	
	Data Engineering and Architecture	3		✓		✓	✓			
	Engineering for Data Analysis	3		✓	✓			✓		
	Advanced Engineering for Data Analysis	3		✓				✓	✓	
Stage 3* Choose 2 out of 3 ** Compulsory	Semester 3									
	Information Systems and Digital Transformation *	3	✓				✓	✓	✓	
	Project Management: Social- Technical Approach *	3	✓			✓	✓	✓		
	Advanced Business Analytics *		✓			✓	✓	✓		
	Artificial Intelligence and Cybersecurity **	3	✓	✓		✓	✓	✓	✓	
	Applied Research Methods **	3	✓	✓	✓	✓	✓	✓	✓	
Stage 4	Semester 4									
	Capstone Project (Artificial Intelligence and Data Engineering)	6		✓	✓	✓	✓	✓	✓	

Student Journey



Mastering Foundations (Term 1)

AI fundamentals, ML/DL, data mining, and HCI



Building Systems (Term 2)

Data architecture, pipelines, advanced engineering for analytics, and AI in services



Scaling & Governance (Term 3)

Digital transformation, project management, analytics, cybersecurity, and research methods



Capstone Impact (Term 4)

Deliver a real-world industrial AI project with measurable outcomes