List of Courses for MSc (Smart Industries and Digital Transformation)

Acad Unit	Course Code and Title	Units	Lab	SSG Subsidy#
Core Courses				
BIZ	IND5001 Introduction to Industry 4.0 and Applications	4	N	N
CDE	IND5002 Digital-Physical Integration in Industry 4.0	4	N	N
FoS	IND5003 Data Analytics for Sense-making	4	N	N
SoC	IND5004 Digital Infrastructure and Transformation	4	N	N
SCALE	IND5005A Professional Career Development	0.5	N	N
	IND5005B Industry Consulting and Application Project	3.5	N	N
Elective Courses				
BIZ	**Graduate Certificate in Digital Supply Chain**	12		
	IND5021 Managing the Digital Supply Chain	4	N	Y
	DOS5022 Data Analytics for Smart Manufacturing	4	N	Y
	DOS5101A Managing the Financial Supply Chain	2	N	Y
	DOS5024 Strategic Procurement in a Digital World	2	N	Y
	DOS5025 Global Industry Insights for Smart Industries	2	N	Y
	Graduate Certificate in Financial Management and Analytics	**12**		
	DBA5105 Fintech, Enabling Technologies, and Analytics	4	N	N
	DBA5107 Data Analytics in Banking	4	N	N
	DOS5101A Managing the Financial Supply Chain	2	N	Y
	DOS5024 Strategic Procurement in a Digital World	2	N	Y
SoC	**Graduate Certificate in Digital Business** (Choose 3 Courses)	12		
	IS5007 Strategising for Global IT-enabled Business Success	4	N	Y
	IS5116 Digital Entrepreneurship	4	N	Y
	IS5117 Digital Government	4	N	Y
	IS5151 Information System Security Policy and Management	4	N	Y
	Graduate Certificate in Computing Foundations II	12		
	(Choose 1 Course)			
	IT5002 Computer Systems and Applications	4	Y	Y
	IT5003 Data Structures and Algorithms	4	Y	Y
	IT5004 Enterprise Systems Architecture Fundamentals	4	Y	Y
	(Choose 2 Courses)			
	IT5005 Artificial Intelligence	4	Y	Y
	IT5006 Fundamentals of Data Analytics	4	Y	Y
	IT5007 Software Engineering on Application Architecture*	4	Y	N
FoS	**Graduate Certificate in Quality Assurance and Yield Optimization+** **(Choose 2 Courses)**	8		
	ST5203 Design of Experiments for Product Design and Process Improvements	4	N	N
	ST5208 Analytics for Quality Control and Productivity Improvements	4	N	Y
	ST5212 Survival Analysis	4	N	Y
	ST5210 Multivariate Data Analysis	4	N	Y
	Graduate Certificate in Statistics for Data Science+ **(Choose 2 Courses)**	8		
	ST5227 Applied Data Mining	4	N	Y
	ST5225 Statistical Analysis of Networks	4	N	Y
	ST5226 Spatial Statistics	4	N	Y
	Other Electives			
	DSA5202 Advanced Topics in Machine Learning	4	N	Y
	DSA5203 Visual Data Processing and Interpretation	4	N	Y
	DSA5102 Foundations of Machine Learning	4	N	Y

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Acad Unit	Course Code and Title	Units	Lab	SSG Subsidy#
ISS	**ISY5002 Graduate Certificate in Pattern Recognition Systems** • Problem Solving Using Pattern Recognition • Pattern Recognition and Machine Learning Systems • Intelligent Sensing and Sense Making • Practice Project	**13**	Y	Refer to ISS website
	ISY5004 Graduate Certificate in Intelligent Sensing Systems • Vision Systems Engineering • Spatial Reasoning from Sensor Data • Real time audio-visual sensing and sense making • Practice Project	**10**	Y	Refer to ISS website
	ISY5003 Graduate Certificate in Intelligent Robotic Systems^ • Autonomous Robots and Vehicles • Human-Robot System Engineering • Robotic Systems • Practice Course	**13**	Y	Refer to ISS website
	ISY5005 Graduate Certificate in Intelligent Software Agents^ • Intelligent Process Automation • RPA and IPA - Strategy and Management • Self-Learning Systems • Software Robots - Best Practices • Practice Course	**10**	Y	Refer to ISS website
CDE	**Graduate Certificate in Internet of Things** (Choose 5 Courses)	**10**		
	EE5020 Data Science for Internet of Things	2	Y	Y
	EE5021 Cloud Based Services for Internet of Things	2	Y	Y
	EE5022 Cyber Security for Internet of Things	2	Y	Y
	EE5023 Wireless Networks	2	Y	Y
	EE5024 Sensor Networks	2	Y	Y
	EE5025 Intellectual Property: Innovations in IoT	2	Y	Y
	EE5026 Machine Learning for Data Analytics	2	Y	Y
	EE5027 Statistical Pattern Recognition	2	Y	Y
	EE5060 Sensors and Instrumentation for Automation	2	Y	Y
	EE5061 Industrial Control and Programming	2	Y	Y
	Graduate Certificate in Robotics and Automation (Choose 3 to 5 Courses)	**10**		
	EE5060 Sensors and Instrumentation for Automation	2	Y	Y
	EE5061 Industrial Control and Programming	2	Y	Y
	EE5062 Autonomous Systems	2	Y	Y
	EE5064 Dynamics and Control of Robotic Manipulators	2	Y	Y
	ME5402 Advanced Robotics	4	Y	N
	ME5405 Machine Vision	4	Y	N

Co-requisite is IT5003 Data Structures and Algorithms
^Pre-requisite is ISY5002 Graduate Certificate in Pattern Recognition Systems
#SSG funding for courses is limited in duration and subject to availability
+Graduate Certificate offered only to cohorts AY2023/24 and before.

Note: Course offerings are subject to changes every Semester. The University reserves the right to make changes to the Graduate Certificate offerings as necessary without prior notice.