

Bachelor of Science in Mechatronics Engineering (BScME)
Program Viewbook
Canadian University Dubai



CANADIAN
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INSPIRING MINDS
TRANSFORMING LIVES

Program Overview

The Bachelor of Science in Mechatronics Engineering (BScME) program at Canadian University Dubai is designed to equip students with expertise in mechanical, electrical, and software systems to develop intelligent automation and robotic solutions. The interdisciplinary curriculum integrates advanced principles of robotics, artificial intelligence, automation, industrial control, and management to prepare graduates for leadership roles in smart manufacturing, autonomous systems, and Industry 4.0.

Program Requirements

Core Courses	115 Cr. Hrs.
Technical Electives	12 Cr. Hrs.
Practical Experience and Projects	07 Cr. Hrs.
Total	134 Cr. Hrs.

Core Courses

Course Code	Course Title	Prerequisite	Cr. Hrs.
Mathematics and Sciences			30 Cr. Hrs.
MTH 112	Calculus I	None	3-0-3
MTH 113	Calculus II	MTH 112	3-0-3
MTH 114	Linear Algebra	MTH 112	3-0-3
MTH 120	Discrete Mathematics	None	3-0-3
MTH 130	Probability and Statistics	MTH 112	3-0-3
MTH 212	Calculus III	MTH 113	3-0-3

Course Code	Course Title	Prerequisite	Cr. Hrs.
MTH 220	Ordinary Differential Equations	MTH 212	3-0-3
SCI 210	Modern Physics	None	2-2-3
SCI 220	Engineering Mechanics	None	3-0-3
SHS 103	Chemistry	None	2-2-3
Electromechanical Engineering			46 Cr. Hrs.
ENG 102	Digital Logic	None	2-2-3
ENG 122	Engineering Graphics and Design	None	0-2-1
NET 105	Microprocessors and Microcontrollers	ENG 102 or NET 100	2-2-3
ENG 213	Electric Circuit I	SCI 210	2-2-3
ENG 225	Electronics I	ENG 213	2-2-3
ENG 315	Control Systems	MTH 220	3-0-3
ENG 317	Digital Signal Processing	MTH 212	3-0-3
ENG 323	Electric Machines	ENG 213	2-2-3
MEC 305	Mechanical Vibrations	MTH 220	2-2-3
MEC 307	Mechanical Engineering Design	ENG 122	3-0-3
MEC 309	Electro-Pneumatic & Hydraulic Control Circuits	PRE 252	2-2-3
MEC 323	Industrial Automation	Co-requisite MEC 324	3-0-3
MEC 324	Mechatronics Systems Design	MTH 220	2-2-3
MEC 414	Programmable Logic Controllers	ENG 315	2-2-3
MEC 415	Computer Integrated Manufacturing (CIM)	MEC 323	2-2-3
PRE 252	Thermo Dynamics and Fluid Mechanics	SCI 210	3-0-3
Computer Science and Computation			12 Cr. Hrs.
SWS 110	Programming I	None	2-2-3
SWS 111	Programming II	SWS 110	2-2-3
ENG 316	Internet of Things and Data Science	NET 105	2-2-3
BCS 407	Artificial Intelligence	SWS 111 or BCS 206, BCS 222	3-0-3
Professional Studies and General Education			27 Cr. Hrs.
LNG 181	English I for Engineering & Computing	None	3-0-3

Course Code	Course Title	Prerequisite	Cr. Hrs.
LNG 182	English II for Engineering & Computing	LNG 181	3-0-3
GED 190	Emirati Studies	None	3-0-3
GED 255	Critical Thinking and Problem Solving	LNG 182 or LNG 172	3-0-3
ENT 141	Fundamentals of Innovation and Entrepreneurship 1	None	2-0-2
ENT 142	Fundamentals of Innovation and Entrepreneurship 2	ENT 141	0-2-1
ENT 241	Entrepreneurship 1	ENT 142	2-0-2
ENT 242	Entrepreneurship 2	ENT 241	0-2-1
BUS 311	Engineering Economy	MTH 130	3-0-3
ENG 416	Professional and Engineering Ethics	Min 60 Cr. Hrs.	3-0-3
Humanity Elective Courses (03 Credits): Students are required to Select ONE course from the following courses			
GED 103	Head Anatomy Sculpture	None	2-2-3
GED 106	Data Literacy for Everyday Decisions	None	2-2-3
GED 110	Modern Art Appreciation	None	2-2-3
GED 111	Music Appreciation and Communication	None	3-0-3
GED 191	Islamic Studies	None	3-0-3
GED 196	Communication Skills in Arabic	None	3-0-3
GED 205	Psychology in Everyday Life	LNG 182 or LNG 172	3-0-3
GED 324	Ethical Reasoning for Today's World	LNG 182 or LNG 172	3-0-3
GED 330	Introduction to Canadian Studies	None	3-0-3

Technical Electives

Course Code	Course Title	Prerequisite	Cr. Hrs.
Suggested Elective Options (Students are required to select One of the following two options)			12 Cr. Hrs.

1. Robotics Artificial Intelligence			
BAI 306	Introduction to Computer Vision	ENG 317 or BCS 202, MTH 114, BAI 301	2-2-3
RAI 401	Robotics	MTH 114, MEC 324	2-2-3
RAI 403	Machine Learning for Robotics	MTH 120, RAI 401	3-0-3
RAI 404	Vehicle Automation Systems	RAI 401	2-2-3
2. Industrial Management			
IDM 401	Smart Manufacturing Systems	ENG 316	3-0-3
IDM 402	Smart Supply Chain Management	ENG 316	3-0-3
IDM 403	Production Planning and Control	MEC 415	3-0-3
IDM 404	Industrial Safety and Risk Management	MEC 323	3-0-3

Practical Experience and Projects

Course Code	Course Title	Prerequisite	Cr. Hrs.
Practical Experience and Project			7 Cr. Hrs.
MEC 480	Internship in Mechatronics Engineering	90 Cr. Hrs. & CGPA \geq 2.0	3-0-3
MEC 407	Graduation Project 1	Completed 90 Cr. Hrs.	0-4-2
MEC 408	Graduation Project 2	MEC 407	0-4-2

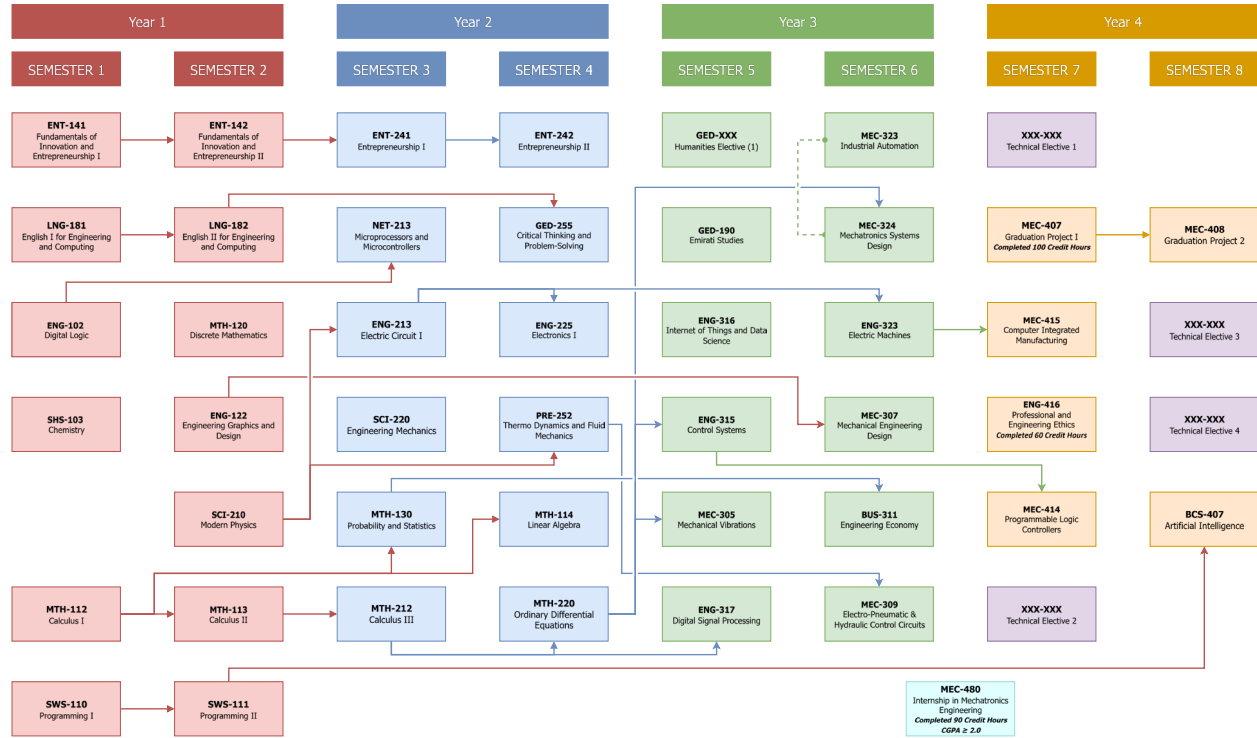
Study Plan

Sem.	Course Code	Course Title	Prerequisite / Co-requisite	Cr. Hrs.
Semester 1	LNG 181	English I for Engineering & Computing	None	3-0-3
	ENG 102	Digital Logic	None	2-2-3
	MTH 112	Calculus I	None	3-0-3
	SHS 103	Chemistry	None	2-2-3
	SWS 110	Programming I	None	2-2-3

	ENT 141	Fundamentals of Innovation and Entrepreneurship 1	None	2-0-2
	Total			17
Semester 2	LNG 182	English II for Engineering & Computing	LNG 181	3-0-3
	ENT 142	Fundamentals of Innovation and Entrepreneurship 2	ENT 141	0-2-1
	MTH 113	Calculus II	MTH 112	3-0-3
	MTH 120	Discrete Mathematics	None	3-0-3
	ENG 122	Engineering Graphics and Design	None	0-2-1
	SWS 111	Programming II	SWS 110	2-2-3
	SCI 210	Modern Physics	None	2-2-3
	Total			17
Semester 3	MTH 130	Probability and Statistics	MTH 112	3-0-3
	MTH 212	Calculus III	MTH 113	3-0-3
	NET 105	Microprocessors and Microcontrollers	ENG 102 or NET 100	2-2-3
	ENG 213	Electric Circuit I	SCI 210	2-2-3
	ENT 241	Entrepreneurship 1	ENT 142	2-0-2
	SCI 220	Engineering Mechanics	None	3-0-3
	Total			17
Semester 4	MTH 114	Linear Algebra	MTH 112	3-0-3
	MTH 220	Ordinary Differential Equations	MTH 212	3-0-3
	ENG 225	Electronics I	ENG 213	2-2-3
	ENT 242	Entrepreneurship 2	ENT 241	0-2-1
	PRE 252	Thermo Dynamics and Fluid Mechanics	SCI 210	3-0-3
	GED 255	Critical Thinking and Problem-Solving	LNG 182 or LNG 172	3-0-3
	Total			16
Semester 5	GED XXX	Humanity Elective	None	3-0-3
	GED 190	Emirati Studies	None	3-0-3
	MEC 305	Mechanical Vibrations	MTH 220	2-2-3
	ENG 315	Control Systems	MTH 220	3-0-3

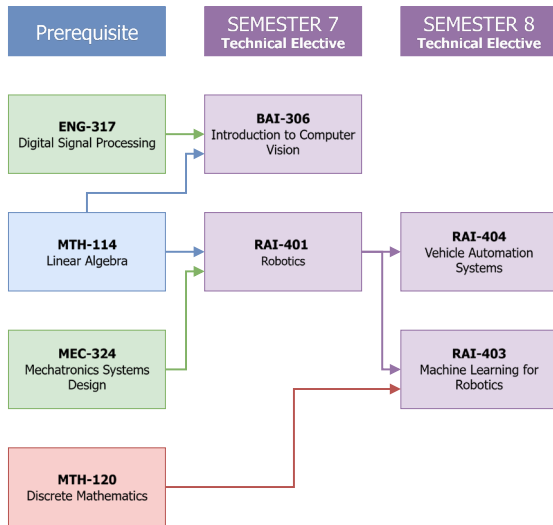
	ENG 316	Internet of Things and Data Science	NET 105	2-2-3
	ENG 317	Digital Signal Processing	MTH 212	3-0-3
	Total			18
Semester 6	BUS 311	Engineering Economy	MTH 130	3-0-3
	ENG 323	Electric Machines	ENG 213	2-2-3
	MEC 307	Mechanical Engineering Design	ENG 122	3-0-3
	MEC 309	Electro-Pneumatic & Hydraulic Control Circuits	PRE 252	2-2-3
	MEC 323	Industrial Automation	Co-requisite MEC 324	3-0-3
	MEC 324	Mechatronics Systems Design	MTH 220	2-2-3
Total			18	
Semester 7	MEC 407	Graduation Project 1	Completed 90 Cr. Hrs.	0-4-2
	ENG 416	Professional and Engineering Ethics	Min 60 Cr. Hrs.	3-0-3
	MEC 414	Programmable Logic Controllers	ENG 315	2-2-3
	MEC 415	Computer Integrated Manufacturing (CIM)	MEC 323	2-2-3
	XXX XXX	Technical Elective 1		3
	XXX XXX	Technical Elective 2		3
Total			17	
Semester 8	BCS 407	Artificial Intelligence	SWS 111 or BCS 206, BCS 222	3-0-3
	MEC 408	Graduation Project 2	MEC 407	0-4-2
	XXX XXX	Technical Elective 3		3
	XXX XXX	Technical Elective 4		3
	Total			11
Internship to be taken after completion of 90 Cr. Hrs. and CGPA 2.0 or more.			3	
Total Program Credits				134

Program Prerequisite Structure



Robotics Artificial Intelligence

Technical Electives



Industrial Management - Technical

Electives

