Degree and Study Plan

College: Engineering
Program: Mechatronics Engineering
Cohort: **2023**
Degree: Bachelor of Engineering
Major: Mechatronics Engineering

Summary of Credits		
1	University Requirements (UR)	**6**
	General Foundation Program	*(0)*
	Arabic language	*(2)*
	Contemporary Omani State and People	*(2)*
	Oman & Islamic Civilization or Islamic Culture	*(2)*
2	University Elective (UE)	**6**
3	College Requirements (CR) (see List B)	**32**
4	College Elective (CE) (see List C)	**3**
7	Major Requirements (AR) (see List F)	**77**
8	Major Elective (AE) (see List G)	**12**
Total credits		**136**

For reference contact: Dr. Nasr Al-Hinai. Ext. 1352 Date: 3-4-2024

Dean's Office Date: 4/4/2024

Admission and Registration Date:

Important Information

- Students MUST follow one of the three schemes of the Degree Plan:
  - Scheme I is for students who completed the Foundation Program in one regular semester (Fall).
  - Scheme II is for students who completed the Foundation Program in two regular semesters (Fall & Spring).
  - Cooperative Training (COOP) Scheme is optional. It is designed for students who are following Scheme I or II and willing to take a one-year COOP program in semesters 9 and 10.
- Students are advised to regularly check the most updated degree plan on the College's website: https://www.squ.edu.om/engineering/Academic/Undergraduate-Programs/Mechatronics-Engineering
- Course description and exact prerequisite(s) can be found on SQU's Portal: https://portal.squ.edu.om/course-description

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME I – With One Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Fall-23	-	General Foundation Program	-	-	UR
Semester 2 Spring-24	HIST1010 or ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0604) and FPMT(0105)	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0604)	CR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105)	CR
	Total		14		
Semester 3 Fall -24	ARAB1060	Arabic	2		UR
		University Elective	2		UE
	SOCY1005	Oman: State and People	2		UR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2109	Calculus II for Science and Engineering	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105), MATH2107*	CR
	Total		16		
Semester 4 Spring-25	MATH4174	Differential Equations for Engr.	3	MATH2109	CR
	PHYS2108	Physics for Eng. II	4	PHYS2107	CR
	COMP2002 or ENGR2217	Intr. to Comp. Program. for Eng. or Programming for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CE
	ECCE2017	Electric Circuit Analysis	4	MATH2107	AR
	MEIE3103	Engineering Tools and Graphics	2	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	AR
	Total		16		
Semester 5 Fall -25	MATH3171	Lin. Alg. & Mult. Calc. for Eng.	3	MATH2109	CR
	MCTE2129	Engineering Mechanics	3	PHYS 2107 and MATH2107	AR
	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	AR
	ECCE3206	Digital Logic Design	3		AR
	MCTE3250	Engineering System Design	3	MEIE3103	AR
	Tot		**15**		
Semester 6 Spring-26	MCTE3230	Properties and Strength of Materials	3	MCTE2129 or MEIE2129	AR
	MCTE4185	Signals & Systems for Mechatronics	3	ECCE2017 or ECCE3016	AR
	MCTE3310	Electronics for Mechatronics	3	ECCE2017 or ECCE2016	AR
		University Elective	2		UE
	MEIE3122	Machine Dynamics	3	MCTE2129 or MEIE2129	AR
	Tot		**14**		

& OR ENGR 2217-Programming for Engineers

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME I – With One Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-26	MCTE4102	Machine Design for Mechatronics	3	MCTE3230	AR
	MCTE4145	Instrumentation & Measurement	3	MCTE3110 or MCTE3310	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE2017 or ECCE3016	AR
	ECCE4227	Embedded Systems	3	(COMP2002 or ENGR2217) and ECCE3206	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	Total		**15**		
Semester 8 Spring-27	MCTE4210	Power Electronics & Drives	3	MCTE3110 or MCTE3310 and MCTE3210	AR
		University Elective	2		UE
	MCTE4241	Thermofluids	3	PHYS2108 and MATH2109	AR
	MCTE4450	Control Systems Engineering	3	MCTE4150	AR
	ECCE5004	Engineering Managements & Economics I	3	STAT2103 or MEIE3281	AR
	MEIE4183	Numerical Methods for Engineers	3	(COMP2002 or ENGR2217) and MATH3171	AR
	Total		**17**		
Summer-27	ENGR4007	Industrial Training	**0**		CR
	Total		**0**		
Semester 9 Fall-27	MCTE5191	Project I	2	MCTE3250 OR MCTE3240 and PR[1]	AR
	MCTE5210	Real-time control and interfacing	3	MCTE4450	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227 and MCTE4145 and MCTE3250 OR MCTE3240	AR
	MCTE5xxx	Program Elective 1	3		AE
	MCTE5xxx	Program Elective 2	3		AE
	Total		**14**		
Semester 10 Spring- 28	MCTE5291	Project II	3	MCTE5191	AR
	MCTE5xxx	Program Elective 3	3		AE
	MCTE5xxx	Program Elective 4	3		AE
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE5420	Pneumatic and Hydraulic Systems	3	MCTE3210	AR
	Total		**15**		

PR[1]: Internal regulation [enforced by the MCE Program] **Note: Completed 90 Cr.**
MCTE5191 is offered in Fall semesters ONLY.

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME I – With One Semester General Foundation Program)
Co-Operative Scheme

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-26	MCTE4102	Machine Design for Mechatronics	3	MCTE3230	AR
	MCTE4145	Instrumentation & Measurement	3	MCTE3110 or MCTE3310	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE2017 or ECCE3016	AR
	ECCE4227	Embedded Systems	3	(COMP2002 or ENGR2217) and ECCE3206	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	Total		**15**		
Semester 8 Spring-27	MCTE4210	Power Electronics & Drives	3	(MCTE3110 or MCTE3310) and MCTE3210	AR
	MCTE4241	Thermofluids	3	PHYS2108 and MATH2109	AR
	MCTE4450	Control Systems Engineering	3	MCTE4150	AR
	MEIE4183	Numerical Methods for Engineers	3	(COMP2002 or ENGR2217) and MATH3171	AR
		University Elective	2		UE
	Total		**14**		
Fall 27 Coop-Sem.1	ENGR4007	Industrial Training	0		CR
	MCTE5001	Co-op Training I	0	ENGR4007	AE
Spring 28 Coop-Sem.2	MCTE5002	Co-op Training II	6	MCTE5001	AE
	Total		**6**		
Semester 9 Fall-28	MCTE5191	Project I	2	MCTE3240 or MCTE3250 and PR 1	AR
	MCTE5210	Real-time control and interfacing	3	MCTE4450	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227 and MCTE4145 and MCTE3250 or MCTE3240	AR
	MCTE5xxx	Program Elective 1	3		AE
	MCTE5xxx	Program Elective 2	3		AE
	Total		**14**		
Semester 10 Spring- 29	MCTE5291	Project II	3	MCTE5191	AR
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE5420	Pneumatic and Hydraulic Systems	3	MCTE3210	AR
	ECCE5004	Engineering Managements & Economics	3	STAT2103 or MEIE3281	AR
	Total		**12**		

PR[1]: Internal regulation [enforced by the MCE Program Note: **Note: Completed 90 Cr.**
MCTE5191 will be available only in each fall semester.

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME II – With Two Semester General Foundation Program)

	Course Code	Course Title	Cr	Pre-req.	Cat.
Fall-[illegible]	-	General Foundation Program	-	-	UR
Spring-[illegible]	-	General Foundation Program	-	-	UR
Semester 3 Fall-24	HIST1010 or ISLM1010	Oman& Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105)	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0604)	CR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT(0105)	CR
	Total		**14**		
Semester 4 Spring-25	ARAB1060	Arabic	2		UR
	SOCY1005	Oman: State and People	2		UR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2109	Calculus II for Science and Engineering	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105) and MATH2107	CR
		University Elective	2		UE
	Total		**16**		
Semester 5 Fall-25	ECCE2017	Electric Circuit Analysis	4	MATH2107	AR
	MATH4174	Differential Equations for Eng.	3	MATH2109	CR
	PHYS2108	Physics for Eng. II	4	PHYS2107	CR
	MCTE2129	Engineering Mechanics	3	PHYS 2107 and MATH2107	AR
	MEIE3103	Engineering Tools and Graphics	2	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	AR
	Total		**16**		
Semester 6 Spring-26	MCTE3310	Electronics for Mechatronics	3	ECCE2017 or ECCE2016	AR
	MCTE4185	Signals & Systems for Mechatronics	3	ECCE2017 or ECCE3016	AR
	COMP2002 or	Intr. to Comp. Program. for Eng. or Programming for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CE
		University Elective	2		UE
	ECCE3206	Digital Logic Design	3		AR
	MCTE3230	Properties and Strength of Materials	3	MCTE2129 or MEIE2129	AR
	Total		**17**		

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME II – With Two Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-26	MCTE4145	Instrumentation & Measurement	3	MCTE3110 or MCTE3310	AR
	MCTE4102	Machine Design for Mechatronics	3	MCTE3230	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE2017 or ECCE3016	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	ECCE4227	Embedded Systems	3	(COMP2002 or ENGR2217) and ECCE3206	AR
	MCTE3250	Engineering System Design	3		AR
	Total		**18**		
Semester 8 Spring-27	MCTE4210	Power Electronics & Drives	3	MCTE3110 or MCTE3310 and MCTE3210	AR
	MATH3171	Lin. Alg. & Mult. Calc. for Eng.	3	MATH2109	CR
	MEIE3122	Machine Dynamics	3	MCTE2129	AR
	MCTE4450	Control Systems Engineering	3	MCTE4150	AR
	MCTE4241	Thermofluids	3	PHYS2108 and MATH2109	AR
		University Elective	2		UE
	Total		**17**		
Summer-27	ENGR4007	Industrial Training	**0**		CR
	Total		**0**		
Semester 9 Fall-27	MCTE5191	Project I	2	MCTE3250 OR MCTE3240 and PR[1]	AR
	MEIE4183	Numerical Methods for Engineers	3	(COMP2002 or ENGR2217) and MATH3171	AR
	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227 and MCTE3250 and MCTE4185	AR
	MCTE51xx	Program Elective 1	3		AE
	MCTE5210	Real-time control and interfacing	3	MCTE4450	AR
	Total		**17**		
Semester 10 Spring - 28	MCTE5291	Project II	3	MCTE5191	AR
	ECCE5004	Engineering Managements & Economics	3	STAT2103 or MEIE3281	AR
	MCTE5420	Pneumatic and Hydraulic Systems	3	MCTE3210	AR
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE51xx	Program Elective 2	3		AE
	Total		**15**		
Summer -28	MCTE51xx	Program Elective 3	3		AE
	MCTE51xx	Program Elective 4	3		AE
	Total		**6**		

PR[1]: Internal regulation [enforced by the MCE program]
Note: MCTE5191 will be available only in each fall semester.

Mechatronics Engineering Program

Study Plan for 2023 Cohort (SCHEME II – With Two Semester General Foundation Program)
Co-Operative Scheme

	Course	Course Title	Cr.	Pre-	Cat.
Semester 7 Fall-26	MCTE4145	Instrumentation & Measurement	3	MCTE3110 or MCTE3310	AR
	MCTE4102	Machine Design for Mechatronics	3	MCTE3230	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE2017 or ECCE3016	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	ECCE4227	Embedded Systems	3	(COMP2002 or ENGR2217) and ECCE3206	AR
	MCTE3250	Engineering System Design	3	MEIE3103	AR
	Total		**18**		
Semester 8 Spring-27	MCTE4210	Power Electronics & Drives	3	MCTE3110 or MCTE3310 and MCTE3210	AR
	MATH3171	Lin. Alg. & Mult. Calc. for Eng.	3	MATH2109	CR
	MEIE3122	Machine Dynamics	3	MCTE2129 or MEIE2129	AR
	MCTE4450	Control Systems Engineering	3	MCTE4150	AR
	MCTE4241	Thermofluids	3	PHYS2108 and MATH2109	AR
	Total		**15**		
Fall 27 Coop-Sem.1	ENGR4007	Industrial Training	0		CR
	MCTE5001	Co-op Training I	0	ENGR4007	AE
Spring 28 Coop-Sem.2	MCTE5002	Co-op Training II	6	MCTE5001	AE
	Tota l		**6**		
Semester 9 Fall-28	MCTE5191	Project I	2	MCTE3250 or MCTE3240 and PR[1]	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227 and MCTE3250 or MCTE3240 and MCTE4145	AR
	MEIE4183	Numerical Methods for Engineers	3	(COMP2002 or ENGR2217) and MATH3171	
		University Elective	2		UE
	MCTE5210	Real-time control and interfacing	3	MCTE4450	AR
	Total		**13**		
Semester 10 Spring 29	MCTE5291	Project II	3	MCTE5191	AR
	ECCE5004	Engineering Managements & Economics	3	STAT2103 or MEIE3281	AR
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE5420	Pneumatic and Hydraulic Systems	3	MCTE3210	AR
	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	AR
	Total		**15**		
Summer 29	MCTE51xx	Program Elective 1	3		AE
	MCTE51xx	Program Elective 2	3		AE
	Total		**6**		

PR[1]: Internal regulation [enforced by the MCE program]
Note: MCTE5191 will be available only in each fall semester.

Mechatronics Engineering - Study Plan for Cohort 2023

LIST AT - UNIVERSITY ELECTIVES (6 Credits)

#	Code	Title	Credits	College/Department	Pre-requisite
1	ARAB1040	Literature and Sociology	2	Arts	
2	ARAB1050	Language and Sociology	2	Arts	
3	ARCH1170	Development Civilization in Oman	2	Arts	
4	ARCH1180	Archaeology and Environment in Oman	2	Arts	
5	ARCH1520	Arch in Ancient Oman	2	Arts	
6	ARCH1525	Arch Style Arab Gulf	2	Arts	
7	ARCH1526	Islamic Arch	2	Arts	
8	ARCH1530	Oman Arch Through Ages	2	Arts	
9	ARCH1531	History of Animals in Oman	2	Arts	
10	ARCH1535	Oman Towns and their Cultural Remains	2	Arts	
11	ARCH1536	The Archaeology and Knowledge of the Arabian Peninsula	2	Arts	
12	ARCH1537	Cult. Development Arab Gulf	2	Arts	
13	ARCH1538	Oral History Cult. Heritage	2	Arts	
14	ARCH1539	The history and ethnography of jewelry and items of personal adornment in Oman	2	Arts	
15	ARCH1540	Natural Culture Heritage Oman	2	Arts	
16	ARCH1541	Oasis Settlements and Vernacular Architecture in Oman	2	Arts	
17	ARCH1550	Development of Arts and Architecture in Oman	2	Arts	
18	ARCH1551	Admin. Arch. Heritage	2	Arts	
19	ARCH5500	Sea Port and Mart. Arch	2	Arts	
20	ARED1001	Contemporary Visual Arts	2	Education	
21	ARED1002	Appreciation of Islamic Arts and Arabic	2	Education	
22	BCOM1950	Varieties of Public and Professional Communication	3	Commerce	
23	BCOM1960	Cross-Cultural Communication	2	Commerce	
24	BIOL1003	Genetics in our Life	2	Science	
25	BIOL1004	Environment Issues	2	Science	
26	CUTM1002	Environmental Education	2	Education	
27	CUTM1003	Principles of Teaching	2	Education	
28	GEOG2021	Man and Natural Environments in Oman	2	Arts	
29	GEOG2031	Urbanization in the Arabian Gulf	2	Arts	
30	GEOG2122	Man and Environment	2	Arts	
31	GEOG2341	Dev. Countries	2	Arts	
32	HIST1030	History of the GCC Countries	2	Arts	
33	HIST1040	Some Aspects of the History of Oman	2	Arts	
34	INFO4100	Children's Literature	2	Arts	
35	ISLM1020	Human Right in Islam	2	Education	
36	ISLM2010	Prophet Biog.	2	Education	
37	ISLM2030	The Miracle of the Holy Quran	2	Education	
38	ISLM2040	Islamic Economy	2	Education	
39	ISLM2060	Family Systems in Islam	2	Education	
40	ISLM2070	Quranic Stories	2	Education	
41	ISLM2080	General Aims	2	Education	

42	ISLM2090	Islamic Ethics	2	Education	
43	ISLM2150	Islam and the Modern World	2	Education	
44	MASS1020	Arts of Media Edit	2	Arts	
45	MASS1030	Public Opinion (UE)	2	Arts	
46	MASS1060	Mass Media and Society	2	Arts	
47	MASS1070	International Comm.	2	Arts	
48	MASS1080	Principles of Public Relations (UE)	2	Arts	
49	NURS1004	First Aid	2	Nursing	
50	NURS1005	Physical & Psychological Child Health	2	Nursing	
51	PHED1000	Physical Fitness	2	Education	
52	PHIL2050	International Meth	2	Arts	
53	PHIL2060	Ethics	2	Arts	
54	PHIL2070	Trends of Contemporary Philosophical Thought	2	Arts	
55	PHIL2213	Science in Arab Through	2	Arts	
56	PSYC1001	Human Behavior	2	Education	
57	PSYC1002	Psych/Human Problems	2	Education	
58	SOCI2151	Medical Sociology	2	Arts	
59	SOCI2361	Introduction to Social Work	2	Arts	
60	THAR1001	Theater Appreciation	2	Arts	
61	THAR1003	Music Appreciation	2	Arts	
62	THAR1012	Play Writing	2	Arts	
63	THAR1013	Oratory/Presentation	2	Arts	
64	THAR1014	Scholastic Theater	2	Arts	
65	THAR1016	Child's Theater	2	Arts	
66	THAR1017	Theater Scenography	2	Arts	
67	TOUR1050	Tourism in Oman	2	Arts	

: Engineering students must select a humanity or social course (non-scientific & non-linguistic course) from any college as a University Elective. Please also refer to the College of Engineering Regulations.

Mechatronics Engineering - Study Plan for Cohort 2023

LIST B: COLLEGE REQUIREMENTS (32 Credits)

Course Code	Course Title	Credit	Pre-Requisite
CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105)
ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0604)
ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0604)
ENGR4007	Industrial Training	0	
LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0604)
LANC2161	English for Engineering II	3	LANC2160
MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT (0105)
MATH2109	Calculus II for Science and Engineering	3	MATH2107
MATH3171	Linear Algebra & Multivariate Calculus for Engineers	3	MATH2109+LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2109+LANC2161
PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0604) and FPMT(0105)
PHYS2108	Physics for Engineering II	4	PHYS2107 OR PHYS2101
Total		**32**	

Mechatronics Engineering - Study Plan for Cohort 2023

LIST C: COLLEGE ELECTIVE (3 Credits)

Course Code	Course Title	Credit	Pre-Requisite
COMP2002 Or ENGR2217	Introduction to Computer Programming for Engineers Or Programming for Engineers	**3**	FPEL (0560 or 0600 or 0601 or 0604) and FPCS (0101)
Total		**3**	

@ For the MCE program the course is, COMP2002 OR ENGR 2217.

Mechatronics Engineering Program

Mechatronics Engineering - Study Plan for Cohort 2023
LIST F: Major Requirements (77 Credits)

Course Code	Course Title	Credit	Pre-Requisite / Co-req. *
ECCE2017	Electric Circuit Analysis	4	MATH2107
MCTE3310	Electronics for Mechatronics	3	ECCE2017 or ECCE2016
MCTE2129	Engineering Mechanics	3	PHYS 2107 and MATH2107
MCTE4145	Instrumentation & Measurement	3	MCTE3110 or MCTE3310
MCTE3230	Properties and Strength of Materials	3	MCTE2129 or MEIE2129
MEIE3281	Probability & Statistics for Engineers	3	MATH2107
MEIE3103	Engineering Tools and Graphics	2	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or
MCTE4102	Machine Design for Mechatronics	3	MCTE3230
MCTE4185	Signals & Systems for Mechatronics	3	ECCE2017 or ECCE3016
MCTE3210	Electromechanical Systems & Actuators	3	ECCE2017 or ECCE3016
ECCE3206	Digital Logic Design	3	
MCTE4210	Power Electronics & Drives	3	MCTE3110 or MCTE3310 and MCTE3210
MCTE4241	Thermofluids	3	PHYS2108 and MATH2109
ECCE4227	Embedded Systems	3	(COMP2002 or ENGR2217) and ECCE3206
ECCE5004	Engineering Managements & Economics I	3	STAT2103 or MEIE3281
MCTE4150	Modeling & Simulation	3	MATH4174
MEIE4183	Numerical Methods for Engineers	3	(COMP2002 or ENG2217) and MATH3171
MEIE3122	Machine Dynamics	3	MCTE2129 or MEIE2129
MCTE5191	Project I	2	MCTE3250 OR MCTE3240, PR[1]
MCTE3250	Engineering System Design	3	MEIE3103
MCTE5210	Real-time control and interfacing	3	MCTE4450
MCTE4450	Control Systems Engineering	3	MCTE4150
MCTE4255	Mechatronics System Design	3	ECCE4227 and MCTE3250 or MCTE3240 and MCTE4145
MCTE5420	Pneumatic and Hydraulic Systems	3	MCTE3210
MCTE5291	Project II	3	MCTE5191
MCTE5142	Robotics	3	MEIE3122
Total		**77**	

PR[1]: Internal regulation [enforced by the MCE program]
Note: MCTE5290 will be available only in each fall semester.

Mechatronics Engineering – Study Plan for Cohort 2023
List G: MAJOR ELECTIVES (12 CREDITS)

Course Code	Course Title	Credit	Pre-requisite
MCTE5001	Coop-Training I	0	ENGR4007
MCTE5002	Coop-Training II	6	MCTE5001
ECCE5433	Modern Control Systems	3	MCTE4450 or MCTE4250
ECCE5453	Mobile Robot Control	3	ECCE3206
ECCE4436	Industrial Control Systems	3	MCTE4450 or MCTE4250
ECCE5008	Project Management	3	ECCE5004
ECCE5223	Advanced Embedded Systems	3	ECCE4227
ECCE5445	Control System Design	3	MCTE4450 or MCTE4250
ECCE5432	Programmable Logic Controllers	3	ECCE3206
ECCE4253	Object Oriented Programming	3	COMP2002
ECCE4255	Applied Programming & Algorithms for Eng.	3	COMP2002
ECCE5443	Optimization Techniques in Eng.	3	MATH3171
MEIE5101	Engineering Vibration	3	MEIE3121 or MCTE2129 or MEIE2129
MEIE5131	Legged locomotion of robots and animals	3	MEIE3122
MEIE5127	Process Control	3	MEIE4122 or MEIE4171 or MCTE4450
MEIE5122	Applied Multi-body Dynamics	3	MEIE3121 or MCTE2129 or MEIE2129
MEIE5146	Renewable Energy	3	MEIE3142 or MEIE3159 or MCTE4230
MEIE5180	Nanotechnology	3	MEIE4161 or MCTE3230
MEIE5182	Fundamentals of Biomechanics	3	MEIE3102 and MEIE3121
MEIE5288	Innovation and Entrepreneurship	3	MEIE4285 or ECCE5004
MEIE5106	Pressure Vessel & Piping System Design	3	MEIE4102 or MCTE4102
MEIE5110	Applied Finite Element Methods	3	MEIE3102 or CIVL3086 or MCTE3230
MEIE5162	Corrosion Engineering	3	MCTE3230
ECCE5229	Embedded Real Time Systems	3	ECCE4227
ECCE5293	Embedded Vision Systems	3	ECCE4227
ECCE4216	Applied Machine Learning	3	ENGR2217 or COMP2002
ECCE5219	Intelligent Applications in Robotics and	3	ECCE4227
ECCE5231	Industrial Networks and Operating Systems	3	ECCE4227
MCTE5103	Selected topics in robotics and control	3	MCTE4450