Master of Engineering in Mechatronics Engineering – Curriculum Framework

No.	Course Code	Knowledge Area / Course Title	Total Credits	Credit Breakdown			
				Theory	Practice/Lab	Assignment/ Seminar	Internship/ Project
6.1		**Part 1 – General Knowledge**	**5**	**4**	**0**	**1**	**0**
1	LP 7302	Philosophy	3	3	0	0	0
2	ME 7318	Scientific Research Methodology	2	1	0	1	0
3		Foreign Language*					
6.2		**Part 2 – Foundational Knowledge in the Discipline**	**14**				
6.2.1		***Compulsory Courses***	***10***	***5.5***	***0***	***4.5***	***0***
1	ME 7315	System Modeling and Simulation	2	1	0	1	0
2	ME 7359	Dynamics of Mechanical Systems	2	1	0	1	0
3	ME 7337	Modern Control Theory	2	1.5	0	0.5	0
4	ME 7324	Sensors and Measurement Signal Processing	2	1	0	1	0
5	ME 7358	Digital Control Systems	2	1	0	1	0
6.2.2		***Elective Courses (minimum 4 credits)***	***4***				
1	ME 7360	Microcontroller Engineering and Applications	2	1.5	0	0.5	0

2	ME 7349	Special Topic in Measurement Systems	2	1	0	1	0
3	ME 7362	Computer Vision and Applications	2	1.5	0.5	0	0
4	ME 7325	Advanced Engineering Vibrations	2	1.5	0	0.5	0
6.3		**Part 3 – Specialized Knowledge**	**23**				
6.3.1		***Compulsory Courses***	***15***	***10***	***2***	***3***	***0***
1	ME 7341	Engineering Optimization	2	1	0	1	0
2	ME 7328	Automatic Hydraulic and Pneumatic Control	2	1	0	1	0
3	ME 7330	Robot Manipulator Dynamics and Control	2	2	0	0	0
4	ME 7352	Electric Motor Modeling and Control	2	1.5	0	0.5	0
5	ME 7348	Advanced Production Management	3	2	1	0	0
6	ME 7309	Flexible Manufacturing Systems (FMS) and Computer-Integrated Manufacturing (CIM)	2	1	1	0	0
7	ME 7351	Intelligent Control	2	1.5	0	0.5	0
6.3.2		***Elective Courses (minimum 8 credits)***	***8***				
1	ME 7342	Microelectromechanical Systems (MEMS)	2	1.5	0	0.5	0
2	IT 7310	Embedded Systems	3	3	0	0	0

3	FE 7340	Machine Learning and Pattern Recognition	3	2.5	0.5	0	0
4	ME 7250	Special Topic in Manufacturing Systems	2	1	0	1	0
5	ME 7257	Distributed Control Systems (DCS) in Industry	2	1.5	0.5	0	0
6	ME 7310	Reverse Engineering and Rapid Prototyping	2	1	1	0	0
7	ME 7331	CNC Machine Control Systems	2	1.5	0	0.5	0
8	ME 7319	Surface Modeling Methods for CAD/CAM	2	1	1	0	0
6.4		**Part 4 – Internship**	**9**	**0**	**0**	**0**	**9**
	ME 7354	Internship	9	0	0	0	9
6.5		**Part 5 – Graduation Project / Capstone Project**	**9**	**0**	**0**	**0**	**9**
	ME 7356	Graduation Project	9	0	0	0	9
		Total	**60**	**-**	**-**	**-**	**18**