

**General Regulations for Master of Science Program in Mechatronics Engineering  
School of Mechanical Engineering, Sharif University of Technology**

Program Duration: 2 years

Total Credits: 29 semester credit hours

Prerequisite Courses (9-15 credits depending on the BS degree program)

- Compulsory courses: 6 Credit Hours
- Compulsory specialized courses: 12 Credit Hours
- Elective specialized courses: 3 Credit Hours
- Seminar: 2 Credit Hours
- M.S. Thesis: 6 Credit Hours

Students from all disciplines which are accepted in the Mechatronics MS program, and have not passed the following courses as part of their BS program, must register in these courses as the prerequisite to their MS program.

	<b>Course No.</b>	<b>Course title</b>	<b>Credit Hours</b>	<b>Prerequisite</b>
8 credit hours	28233 and 28846	Applied Electronics and Laboratory	4	--
	28889	Topics in Electronics and Digital	4	--
9 to 13 credit hours	28261 and 28262	Statics and Strength of Materials	6	--
	28567	Dynamics	4	--
	28568	Vibrations	3	28567
	28564 and 28651	Machine Designs I and II	6	28262
3	28416 or 25411	Automatic Control or (Linear Control)	3	--

*Compulsory Courses ( ^ )*

<b>Course #</b>	<b>Course title</b>	<b>Credit hrs</b>	<b>Prerequisite</b>
28031	Advanced Math	3	-
27551	Mechatronics Systems	3	-
<b>Total</b>	-	<b>6</b>	-

Compulsory Specialized Courses (△)

Course #	Course title	Credit hrs	Prerequisite
28019 Or 25419	Design of Control Systems or Design of Industrial Control Systems	3	28416 (Prerequisite)
28022 or 28905 or 25637	Kinematics and Dynamics of Robots, Robotics Surgery, or Robotics	3	28567 (Prerequisite)
25451 or 28549	Advanced Robotics or Robot Control I	3	28022
25431 or 28045	Advanced Automatic Control or Modern Control	3	28031 , 28416
28049	Modeling and Simulation of Mechatronics Systems	3	28031
28586 or 25461	Robust Control Systems	3	28045 or 25431
28589 or 40645 or 25446	Fuzzy Control Systems	3	
25479 or 28595	Nonlinear Control	3	25431 or 28045
25-445 or 25-443	Artificial Intelligence and Expert Systems or Neural Networks	3	28416
40717	Machine Learning	3	
25445	Expert Systems	3	
40933	Image Processing	3	
25626 or 40687	Machine Vision	3	40933
25363	Power Electronics	3	25213
25365	Electrical Machines Control	3	
25444	System Identification	3	
26345 or 25478	Adaptive Control	3	25431 or 28045
25617	Pattern Recognition	3	
25543	Microprocessor I	3	25532

*Elective Specialized Courses (△)*

<b>Course #</b>	<b>Course title</b>	<b>Credit hrs</b>	<b>Prerequisite</b>
28046	Advanced Dynamics	3	
26669 or 45770 or 28022	Optimization or Modern Algorithms in Optimization or Optimal Design	3	
28042 or 25131	Finite Element Modeling	3	28031
28053	Continuous Systems Vibration	3	28031 and 28568 (prerequisite)
28535	Computer Aided Design and Fabrication	3	
28556	Modal Analysis	3	28568 (prerequisite)
28574	Nonlinear Vibrations	3	28031, 28568 (prerequisite)
28579	Random Vibrations	3	28031, 28568 (prerequisite)
28558	Condition Monitoring	3	28568 (prerequisite)
25555	Internet Programming	3	
25155, 40763	Signal Processing	3	25051
25161	Adaptive Filters	3	25155
25425 or 45765	Optimal Control	3	25431 or 28045
25192	Time-Frequency Analysis	3	25155
25159 or 40967	Speech Processing	3	25155
25558	Computer Interface Circuits	3	25543
25412	Robot Control II	3	25431 or 28045