

Course Structure for M.A. Program

Department of Mechatronic Engineering

National Taiwan Normal University

Adaptive to Class of	Required Credit(s)	Elective Credit(s)	Free Elective Credit(s)	Minimum Total Credits for Graduation
115	4.0 GPE 4.0	12.0 GPE 12.0	12.0 GPE 12.0	28.0 GPE 28.0

Note: The first alphabet "E" on the course name refers to the course in English as a medium of instruction

I. Required Courses: 4.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
MTC8016	1 E Seminar (I)	1.0	1.0	0.0	This course must be retaken with a passing score for 2 times
MTC8017	2 E Seminar (II)	1.0	1.0	0.0	This course must be retaken with a passing score for 2 times

II. Elective Courses: 0.0 credit is required

III. Courses Offered to Students in Different Divisions

A-1. Required Course for , 0.0 credit is required

A-2. Elective Course for , 12.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
MTC0002	1 Robotics	3.0	3.0	0.0	
MTC0013	2 Servo Control	3.0	3.0	0.0	
MTC0017	3 E Linear Control Systems	3.0	3.0	0.0	
MTC0019	4 E Applied Optics	3.0	3.0	0.0	
MTC0022	5 Computer-Aided Optical Design	3.0	3.0	0.0	
MTC0023	6 E Digital Control Systems	3.0	3.0	0.0	
MTC0024	7 Semiconductor Devices and Physics	3.0	3.0	0.0	
MTC0025	8 E Digital Image Processing	3.0	3.0	0.0	
MTC0026	9 Windows Programming	3.0	3.0	0.0	
MTC0027	10 Laser Engineering Technology and Applications	3.0	3.0	0.0	
MTC9003	11 E Digital Signal Processing	3.0	3.0	0.0	
MTC9005	12 Time Frequency Analysis	3.0	3.0	0.0	
MTC9006	13 Object-Oriented Programming	3.0	3.0	0.0	
MTC9007	14 Principles of Electro-Optical Engineering	3.0	3.0	0.0	
MTC9008	15 Artificial Intelligence	3.0	3.0	0.0	
MTM0071	16 Embedded System Design	3.0	3.0	0.0	
MTC8020	17 E Modern Control	3.0	3.0	0.0	
MTC0004	18 Finite Element Analysis	3.0	3.0	0.0	
MTC0009	19 Introduction to Micro-Electro-Mechanical System Technology	3.0	3.0	0.0	
MTC0010	20 Ultra Precision Machining	3.0	3.0	0.0	
MTC0012	21 E Analysis and Design of Thermal-Fluid Systems	3.0	3.0	0.0	
MTC0014	22 E Nano Science and Technology	3.0	3.0	0.0	
MTC0016	23 Micro Actuators and Sensors Analysis and Design	3.0	3.0	0.0	
MTC0020	24 Computer-Aided Mechanism Analysis	3.0	3.0	0.0	
MTC9004	25 Nano/micro-Thermal-Fluidic Systems	3.0	3.0	0.0	
MTC9002	26 Precision Mechanical System Design and Practice	3.0	3.0	0.0	
MTC0007	27 E Numerical Analysis	3.0	3.0	0.0	
MTC8003	28 Advanced Engineering Mathematics	3.0	3.0	0.0	
MTC8006	29 Experimental Design Method	3.0	3.0	0.0	
MTC9012	30 Mechanical Practical Skills	3.0	2.0	2.0	
MTC9010	31 Intelligent Manufacturing Technology	3.0	3.0	0.0	
MTC9011	32 Manufacturing Networking Integration Technology	3.0	3.0	0.0	
MTC9013	33 Precision Welding Engineering	3.0	3.0	0.0	
MTC9014	34 Heat Treatment of Metals	3.0	3.0	0.0	
MTC9015	35 Advanced Computer-Aided Optical Design	3.0	3.0	0.0	
MTC9016	36 Internship of Mechatronic Industries	3.0	1.0	6.0	
MTC9017	37 Flexible Electronics: Materials and Devices	3.0	3.0	0.0	
MTC0005	38 Practice of Miniature Machine Tool Design	3.0	3.0	0.0	
MTC7001	39 E Precision Micro Manufacturing Engineering	3.0	3.0	0.0	
MTC8001	40 Advanced Thermodynamics	3.0	3.0	0.0	
MTC8002	41 Nonlinear Control Systems	3.0	3.0	0.0	
MTC8004	42 Advanced Vibration Engineering	3.0	3.0	0.0	
MTC8005	43 E Optimization	3.0	3.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
MTC8008	44 Advanced Mechanical Dynamics	3.0	3.0	0.0	
MTC8010	45 Microprocessor Controlled Systems	3.0	3.0	0.0	
MTC8011	46 Advanced Heat Transfer	3.0	3.0	0.0	
MTC8013	47 Convection Heat Transfer	3.0	3.0	0.0	
MTC8014	48 E Adaptive Control	3.0	3.0	0.0	
MTC8015	49 Engineering Statistics	3.0	3.0	0.0	
MTC9009	50 E Micro-Joining Engineering	3.0	3.0	0.0	
MTC9019	51 E High Power Semiconductor Devices	3.0	3.0	0.0	
MTC9018	52 E Semiconductor Fabrication Process	3.0	3.0	0.0	
MTC9024	53 Semiconductor Process Equipment and Technology	3.0	3.0	0.0	
MTC9025	54 E Dynamics of Machines	3.0	3.0	0.0	

B-1. Required Course for GPE, 0.0 credit is required

B-2. Elective Course for GPE, 12.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
MTC0014	1 E Nano Science and Technology	3.0	3.0	0.0	
MTC0017	2 E Linear Control Systems	3.0	3.0	0.0	
MTC0019	3 E Applied Optics	3.0	3.0	0.0	
MTC0012	4 E Analysis and Design of Thermal-Fluid Systems	3.0	3.0	0.0	
MTC7001	5 E Precision Micro Manufacturing Engineering	3.0	3.0	0.0	
MTC9003	6 E Digital Signal Processing	3.0	3.0	0.0	
MTC8014	7 E Adaptive Control	3.0	3.0	0.0	
MTC9009	8 E Micro-Joining Engineering	3.0	3.0	0.0	
MTC9018	9 E Semiconductor Fabrication Process	3.0	3.0	0.0	
MTC9019	10 E High Power Semiconductor Devices	3.0	3.0	0.0	
MTC0025	11 E Digital Image Processing	3.0	3.0	0.0	
MTC8020	12 E Modern Control	3.0	3.0	0.0	
MTC0023	13 E Digital Control Systems	3.0	3.0	0.0	
MTC0007	14 E Numerical Analysis	3.0	3.0	0.0	
MTC9025	15 E Dynamics of Machines	3.0	3.0	0.0	
MTC8005	16 E Optimization	3.0	3.0	0.0	

IV. Free Elective Credits

A Free Elective Credit for , 12.0 credits are required

B Free Elective Credit for GPE, 12.0 credits are required