

STUDY PLAN

1ST YEAR

Code	Course Title	Credit Hours	Weekly Hours			Prerequisite
			Lec.	Tut.	Lab	
Fall Semester (Term 1)						
EMAT 110	Calculus for Engineering I	3	3	2	--	
ECHM 110	General Chemistry for Engineering	3	2	2	2	
EPHS 110	Engineering Mechanics I- Statics	3	3	2	--	
ENGR 110	Engineering Design & Graphics	4	3	--	2	
ENGR 111	Engineering Profession; Practice & Responsibilities	2	2	2	--	
HUMN 110	English Language	3	2	--	2	
Total Hours		18	15	8	6	
Spring Semester (Term 2)						
EMAT 120	Calculus for Engineering II	3	3	2	--	EMAT 110
EMAT 121	Linear Algebra	3	3	2	--	
EPHS 120	Engineering Mechanics II Dynamics	3	3	2	--	EMAT 110 and EPHS 110
EPHS 121	Waves, Electricity & Magnetic Fields	3	2	2	2	
ENGR 120	Engineering Computation	3	2	2	2	
HUMN 120	Technical Writing and Communication	3	3	2	--	
Total Hours		18	16	12	4	

2ND YEAR

Code	Course Title	Credit Hours	Weekly Hours			Prerequisite
			Lec.	Tut.	Lab	
Fall Semester (Term 3)						
EMAT 230	Calculus for Engineering III	3	3	2	--	EMAT120
EMAT 231	Differential Equations & Partial Differential Equations	3	3	2	--	EMAT120
ENGR 230	Structures and Properties of Materials	3	2	2	2	ECHM 110 and EPHS 121
MANF 230	Mech. Eng. Design Elements	3	3	2	---	EPHS 110
HUMN xxx	Free Elective	3	3	--	--	
MANF 231	Eng. Mechanics III	3	2	2	2	EMAT 120 & EPHS 120
Total Hours		18	16	10	4	
Spring Semester (Term 4)						
EMAT 240	Statistics & Probability for Engineering	3	3	2	--	EMAT 230
MANF 240	Mechanical Engineering Design I	3	2	2	2	EPHS 110
MANF 241	Mech. Eng. Measurements	3	2	---	2	EPHS 110
MANF 242	Manufacturing Engineering	3	2	---	2	
MANF 243	Mech. Behaviour of Materials	3	2	---	2	MANF 231
HUMN 240	Engineering Economy	3	3	2	--	
Total Hours		18	14	6	8	

3RD YEAR

Code	Course Title	Credit Hours	Weekly Hours			Prerequisite
			Lec.	Tut.	Lab	
Fall Semester (Term 5)						
MANF 350	Composite Lab I	3	---	---	6	
ENGR 231	Fluid Mechanics I	3	2	2	2	EMAT 231
MANF 352	Electrical Circuits & Power	3	2	---	2	EPHS 121
EMAT 351	Modeling & Numerical Solutions	3	3	2	---	EMAT 121 & EMAT 231
MANF 353	Mechanical Engineering Design II	3	3	2	---	MANF 240
ENGR 360	Thermodynamics	3	3	2		EMAT 120
Total Hours		18	10	6	10	
Spring Semester (Term 6)						
ENGR 350	Fluid Mechanics II	3	2	2	2	ENGR 231
MANF 360	Electronics & Instrumentation	3	2	---	2	MANF 352
MANF 361	Industrial Design	3	3	---	---	MANF 240
MANF 363	Finite Elements Application	3	3	2	---	EMAT 230 & EMAT 121
HUMN xxx	Free Elective	3	3	2	--	
MANF 470	Manufacturing Processes Metal Removal	3	2	---	2	MANF 242
Total Hours		18	16	8	4	

4TH YEAR

Code	Course Title	Credit Hours	Weekly Hours			Prerequisite
			Lec.	Tut.	Lab	
Fall Semester (Term 7)						
MANF 471	Numerical Control Machines	3	2	---	2	MANF 242
MANF 473	Mechanical Vibrations	3	2	2	2	MANF 231
MANF 474	Thermodynamics-II	3	3	2	---	ENGR 360
MANF 475	Heat Transfer	3	3	2	---	ENGR 360 & EMAT 230
MANF 476	Manufacturing Process Metal Forming	3	2	---	2	MANF 242
MANF xxx	Elective Course 1	3	3	---	---	MANF 242
Total Hours		18	17	8	8	
Spring Semester (Term 8)						
MANF 480	Production Facilities	3	3	2	---	MANF 242
MANF 481	Control Systems	3	3	---	---	MANF 473
MANF 482	Introduction to Robotics Mechanics	3	3	---	---	EPHS 120
MANF 483	Composite Lab. II	3	---	---	6	MANF 350
MANF 489	Senior Seminar	2	---	---	4	
HUMN 480	Impact of Technology on Society	3	3	2	---	
Total Hours		17	15	4	10	

5TH YEAR

Code	Course Title	Credit Hours	Weekly Hours			Prerequisite
			Lec.	Tut.	Lab	
Fall Semester (Term 9)						
MANF 590	Material Fabrication	3	2	---	2	MANF 243
MANF 592	Properties & Processing of Composites	3	3	---	---	MANF 243
MANF 593	Mechatronics	3	3	---	---	MANF 481
MANF xxx	Elective Course 2	3	3	---	---	MANF 242
MANF xxx	Elective Course 3	3	3	---	---	MANF 242
MANF 599	Senior Project-I	3	1	---	4	4 th Year
Total Hours		18	17	---	8	
Spring Semester (Term 10)						
MANF 594	Noise Analysis & Control	3	2	---	2	MANF 473
MANF 595	Polymer Processing	3	3	---	---	MANF 592
MANF 596	Computer Aided Manufacturing	3	2	---	2	MANF 471
MANF 597	Industrial Organization	4	4	2	---	MANF 242
MANF xxx	Elective Course 4	3	3	---	---	MANF 242
MANF 599	Senior Project-II	3	1	---	4	4 th Year
Total Hours		19	18	2	8	

Technical Elective 1:

MANF 472: Quality Control
 MANF 485: Materials and Process Selection

Prerequisite: EMAT 240
 Prerequisite: MANF 242

Technical Elective 2:

MANF 487: Computer Applications in Industry
 MANF 591: Computer Aided Design

Prerequisite: MANF 242
 Prerequisite: MANF 242

Technical Electives 3 and 4:

MANF 484: Quality Systems
 MANF 486: Work Study
 MANF 488: Reliability Engineering
 MANF 490: Introduction to Mechatronics
 MANF 491: System Modeling
 MANF 598: Operations Research
 MANF 600: Ergonomics

Prerequisite: MANF 242
 Prerequisite: MANF 242
 Prerequisite: MANF 242
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 Prerequisite: MANF 242