

		General Education Courses							ETMA Core Courses											ETMA Electives									
		ENGL 1010 Composition I	MATH 1750 Applied Technical Math I	MATH 1760 Applied Technical Math II	PHYS 1050 Physics for technology	PHYS 1070 Intro. to Renewable Energy	PSYC 1050 Psychology in Work Place	COMM 1100 Oral Communications	ENGR 1030 Engineering Graphics	ETME 1020 Intro to Manufacturing Process	ETME 1010 Intr. to Robotics and control	ETEE 1800 Introduction to Digital systems	ENGT 2090 Advanced Solid Modeling	ETCN 1100 Blue Print Reading and Machinery's Handbook	ETCN 1200 Precision Measurement and Geometric Tolerancing	ETCN 1300 CNC Manufacturing I	ETCN 2250 Lean Manufacturing	ETCN 2400 OSHA-10 and Industry Seminars	ETCN 2500 CNC Manufacturing Capstone	ETME 2310 Automation Systems	ETCN 2100 Computer Aided Manufacturing (MasterCam)	ETCN 2200 CNC Manufacturing II	ETCN 2300 3D Modeling and Prototyping	ENGT 1060 Introduction to AutoCAD	ETCN 1000 Industrial Design	ETCN 2000 Advanced Machining Skills	ETCN 2350 Automated Machining Technology	ETCN 2360 Manufacturing Quality Control	
Program Student Learning Outcomes Students will be able to:		ENGL 1010	MATH 1750	MATH 1760	PHYS 1050	PHYS 1070	PSYC 1050	COMM 1100	ENGR 1030	ETME 1020	ETME 1010	ETEE 1800	ENGT 2090	ETCN 1100	ETCN 1200	ETCN 1300	ETCN 2250	ETCN 2400	ETCN 2500	ETME 2310	ETCN 2100	ETCN 2200	ETCN 2300	ENGT 1060	ETCN 1000	ETCN 2000	ETCN 2350	ETCN 2360	
General Education, Core and Electives																													
1	Analyze technical problems, propose solutions and document with written and oral reports	I	I	I	I	I	I	I	R	R	R	R	R	R	R	R	R	R	R	E	E	R	R	R	R	R	R	R	R
2	Employ technology for communications, data collection, analysis, simulation and control.	I	I	I	I	I	I	I	R	R	R	R	R	I	R	R	R	R	R	E	R	R	R	R	R	R	R	R	R
3	Use basic project management skills, project team work and ethical behavior	R					R	R	I	I	R	R	R	I			E	R	E	R	R	R	E		R	R	E	R	
4	Machine a variety materials using a conversational and CNC lathe, milling machine and grinder.		I	I	I				I	E			I	I	I	R	R		E	R	R	E	R		I	E	E	R	
5	Use the basic manufacturing methods, measurements, automation and quality control		R	R	R	R			I	I	R	R	R	I	R	R	E	I	E	R	R	E	E			R		E	
6	Code PLCs and micro controllers for networking and system control applications		R	R							R	E								R									
7	Apply engineering design and project management principles						R	R	R	I	R	R							E	R					I			E	
8	Use CAD/CAM and apply it to engineering graphics and mechanical design								I	R			E	R	R	R			E		E	R	E	I	I				
9	Apply the basics of engineering materials, structures and to mechanical design		R	R	R				I	R	R						R		E						I				
10	Read blue prints, perform component measurements and utilize the Machinery's Handbook		R	R					I	R	R		R	I	I	I	R		E	R	R	R	E		I			E	
11	G-code program, setup CNC machines, select appropriate tooling and fixtures		R	R	R				I	R	R	R	R	R	R	I			E	R	R	R	E				R		
12	Apply subtractive and additive (3D-printing) manufacturing for rapid prototyping		R	R	R				I	R	R	R	R	R	R	R			E	R	R	R	E						