

Advanced Manufacturing Technology Degree (ETMA)

Associate in Science in Advanced Manufacturing Technology (AS_ETMA)

Knight Campus, Warwick only

Modern advanced manufacturing has been revolutionized by the use of computers for design, machining and automation. Today almost all product and component design uses computer-aided design (CAD) and computer-aided manufacturing (CAM) programs. The manufacturing process uses computers to control all aspects of subtractive and additive manufacturing (3-D printing). Computer numerical control (CNC) machining is at the heart of advanced manufacturing and the production of complex components accurately and efficiently. Advanced manufacturing also uses computers to control materials, inspection, quality assurance and distribution of finished products.

This program will provide students with extensive hands-on laboratory experience, and the basic skills and knowledge for employment in a variety of advanced manufacturing positions. The program will cover areas of science and mathematics and their applications to machining practices and CNC programming, and places emphasis on both theoretical and practical phases of the design, cost, quality and production of machined parts.

This associate degree is linked to three certificates or tracks: Manufacturing Design and Rapid Prototyping (ETMD), Advanced Machining Skills (ETMM) and Manufacturing Automation and Quality (ETMQ). Students can start their studies with one or more of the certificates or have all credits apply to the associate degree. The degree path requires prerequisites of MATH 0101 and ENGL 1005. Full-time students can expect to complete this program in five semesters.

General Education Requirements

COURSE NO.	COURSE TITLE	COURSE NOTES	CREDITS
ENGL 1010	Composition I		3
MATH 1179	Applied Technical Mathematics I		3
MATH 1181	Applied Technical Mathematics II		3
PHYS 1050	Physics for Technology I		4
PHYS 1070	Introduction to Renewable Energy		3
PSYC 1050	Psychology in the Workplace		3
COMM 1100	Public Speaking		3
Total General Education Requirements Credits			22

Core Requirements

COURSE NO.	COURSE TITLE	COURSE NOTES	CREDITS
ENGR 1030	Engineering Graphics		3
ETME 1020	Introduction to Manufacturing Processes		3
ETCN 1100	Blueprint Reading and the Machinery's Handbook	Seven-and-a-half week course	3
ETCN 1200	Precision Measurement and Geometric Dimensioning and Tolerance	Seven-and-a-half week course	3
ETCN 1300	CNC Machining I		3
ENGT 2090	Advanced Solid Modeling		3
ETEE 1800	Introduction to Digital Systems		3
ETME 1010	Robotics and Control		3
ETCN 2250	Lean Manufacturing		2
ETCN 2400	Industry and OSHA-10 Seminars		1
ETCN 2500	Computer Numerical Control (CNC) Practicum/Capstone		4
Total Core Requirements Credits			31

Choose at least twelve (12) elective requirement credits:

Elective Requirements

COURSE NO.	COURSE TITLE	COURSE NOTES	CREDITS
ENGT 1060	AutoCAD (Basic)		2
ETCN 1000	Mechanical Industrial Design		3
ETCN 2300	3D-Modeling and Prototyping		3
ETCN 2000	Advanced Machining Skills		3
ETCN 2100	Computer Aided Manufacturing	Seven-and-a-half week course	3
ETCN 2200	CNC Machining II	Seven-and-a-half week course	3
ETCN 2350	Automated Machining Technology		3
ETME 2310	Automation Systems		3
ETCN 2360	Manufacturing Quality Control		3
Total Elective Requirements Credits			26

Total Program Credits 65-79