Kansas State Polytechnic: College of Technology and Aviation

Mechanical Engineering Technology

Overview

If you enjoy creating new things or finding ways to make things better, mechanical engineering technology may be the right program for you. Mechanical engineering technology prepares graduates to creatively apply engineering design principles to meet the world's problems. Emphasis is on product and machine design, manufacturing, and automation solutions.

Professional options

Careers

Applied mechanical engineers are needed everywhere, in almost any field you can think of, such as: aerospace, automation, agricultural equipment, automotive systems, biomedical, consumer products, energy systems, food processing, petrochemical production and many others.

Bachelor's degree graduates typically work as applied engineers in areas such as product design and development, project management, manufacturing, plant operation or product testing. Graduates can apply specific program principles to the analysis, design, development, implementation, or management of advanced mechanical systems or processes. Graduates generally have job titles such as mechanical engineer, mechanical designer, or project engineer, and can advance to management positions.

Associate degree graduates work as engineering technicians, providing technical support in areas such as design, CAD, installation, fabrication, field support, testing, maintenance of mechanical systems, or sales related to mechanical systems.

Points of pride

Our industry-relevant, hands-on problem-solving curriculum means graduates are job-ready, with near 100% placement.

Some K-State Polytechnic graduates have built on their mechanical engineering technology bachelor's degree foundation to attain positions such as Plant Manager, Vice President, or Offshore Rig Supervisor.

Academics

Degree options

The mechanical engineering technology program options are built upon a strong foundation of applied technical courses, science, mathematics, and communication skills designed to meet current industry needs. Courses in technical graphics and CAD, traditional and advanced manufacturing processes, materials, materials strength and testing, machine design and automation control provide a broad range of technical and analysis skills suitable for career mobility in a variety of fields. Courses in communications, management, humanities, social sciences, and business complement the technical curriculum.

Course work emphasizes problems-based learning, challenging students to apply principles to industry-relevant problems throughout the program. Sophomore and senior year projects require a design-build-test team project either in partnership with a real industry customer or as undergraduate research. Students are encouraged to pursue an industry internship as an elective option.

Accreditation

The bachelor's degree option in mechanical engineering technology option is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

Preparation

The program of study at Kansas State Polytechnic is designed for the student especially interested in the practical application of mechanical design, manufacturing, and automation. Students should concentrate on mathematics, oral and written communications, and the physical sciences with related laboratory experiences.

Facilities

Mechanical engineering technology laboratories at K-State Polytechnic provide hands-on experience with industry-relevant equipment and software in nearly every mechanical course. Open access to the manufacturing laboratory provides student teams and individuals access to build and test their designs—for course projects, for student clubs such as SAE Baja car, Cat Cannon, Robot Club, UAS, or Rocketry, or even to pursue a personal design idea.

Facilities include engineering computer stations with professional engineering software for computer-aided design (CAD), computer-aided engineering and analysis (CAE), and computer-aided manufacturing (CAM). The modern machine and prototyping shop includes computer-controlled 5-axis CNC machining, CNC plasma sheet cutting, 3D scanning, and multiple 3D printing platforms. Standard industry equipment supports machining, sheet metal fabrication, welding, heat treating, plastic injection molding, and measurement and inspection. Additional facilities provide metallurgical and materials testing and fluid power applications and testing.

Automation and controls laboratory equipment includes industrial robots, modern industrial PLCs, machine vision, and materials handling and process equipment.

Required coursework

Mechanical Engineering Technology, bachelor's degree option (127 credit hours)

Freshman

Fall semester (17 credit hours)

3	CMST 110	Introduction to Visual Basic
3	ENGL 100	Expository Writing I
0	ETA 020	Engineering Technology Seminar
3	MATH 100	College Algebra
2	MATH 151	Applied Plane Trigonometry
3	MET 111	Technical Graphics
3	MET 121	Manufacturing Methods

Spring semester (18 credit hours)

3	CHM 110	General Chemistry
1	CHM 111	General Chemistry Laboratory
2	COMM 105	Public Speaking IA
3	MET 117	Mechanical Modeling and Detailing
2	MET 125	Computer-Numerical-Controlled Machine Processes
4	PHYS 113	General Physics I
3	Humanities/social science elective	

Sophomore

Fall semester (17 credit hours)

4	ECET 100	Basic Electronics
4	MATH 220	Analytic Geometry and Calculus I
3	MET 211	Statics
3	MET 231	Physical Materials and Metallurgy
3	MET 252	Fluid Power Technology

Spring semester (16 credit hours)

3	ENGL 302	Technical Writing
3	MET 230	Automated Manufacturing Systems I
3	MET 245	Material Strength and Testing
3	MET 246	Dynamics of Machines
4	MET 264	Machine Design Technology I

Junior

Fall semester (16 credit hours)

3	ECET 304	Electric Power and Devices
4	MATH 221	Analytic Geometry and Calculus II
3	MET 314	Finite Element Analysis and Design Modeling
3	MET 365	Machine Design Technology II
3	Computer elective*	

Spring semester (15 credit hours)

3	ENGL 200	Expository Writing II
3	MET 346	Elements of Mechanisms
3	MET 353	Fluid Mechanics
3	MET 382	Industrial Instrumentation and Controls
3	Technical elective**	

Senior

Fall semester (14 credit hours)

1	MET 462	Senior Design Project I
3	MET 481	Automated Manufacturing Systems II
3	PHYS 114	General Physics II
3	Humanities/social science elective	
3	Humanities/social science elective**	

Spring semester (14 credit hours)

2	MET 464	Senior Design Project II
3	MET 471	Thermodynamics and Heat Transfer
3	Business elective	
3	Humanities/social science elective**	
3	Technical elective**	

*Suggested computer electives

3	CMST 302	Applications in C Programming for Engineering Technology
3	CMST 310	Visual Basic Programming
3	CMST 341	C++ Programming

****Marked electives must be upper-level courses, 300 and above.**

Mechanical Engineering Technology, associate degree option, (68 credit hours)

Freshman

Fall semester (17 credit hours)

3	CMST 110	Introduction to Visual Basic
3	ENGL 100	Expository Writing I
0	ETA 020	Engineering Technology Seminar
3	MATH 100	College Algebra
2	MATH 151	Applied Plane Trigonometry
3	MET 111	Technical Graphics
3	MET 121	Manufacturing Methods

Spring semester (18 credit hours)

3	CHM 110	General Chemistry
1	CHM 111	General Chemistry Laboratory
2	COMM 105	Public Speaking IA
3	MET 117	Mechanical Modeling and Detailing
2	MET 125	Computer-Numerical-Controlled Machine Processes
4	PHYS 113	General Physics I
3	Humanities/social science elective	

Sophomore

Fall semester (17 credit hours)

4	ECET 100	Basic Electronics
4	MATH 220	Analytic Geometry and Calculus I
3	MET 211	Statics
3	MET 231	Physical Materials and Metallurgy
3	MET 252	Fluid Power Technology

Spring semester (16 credit hours)

3	ENGL 302	Technical Writing
3	MET 230	Automated Manufacturing Systems I
3	MET 245	Material Strength and Testing
3	MET 246	Dynamics of Machines
4	MET 264	Machine Design Technology I

For more information about the mechanical engineering technology program, contact:

Kansas State Polytechnic
Office of Admissions
2310 Centennial Road
Salina, KS 67401-8196
785-826-2640
polytechnic@k-state.edu

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KANSAS STATE UNIVERSITY

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Post-Graduation Statistics
k-state.edu/postgrad-stats
ksdegreestats.org

2017