

Lakeland

COMMUNITY COLLEGE

PROGRAM GUIDE

Applied Studies Division

Mechanical Engineering Technology

- Associate of Applied Science Degree in Mechanical Engineering Technology
- Associate of Applied Science Degree in Mechanical Engineering, Computer Aided Design Concentration
- AutoCad Operator Certificate
- CAD Design Certificate
- Engineering Technology Foundations Certificate
- Mechanical and Manufacturing Technology Certificate

Opportunity
starts **HERE**

lakelandcc.edu



Mechanical Engineering Technology



Lakeland's Associate Degree Program in the Mechanical Engineering Technologies prepares students to design and analyze mechanical elements to allow for immediate employment as a technician.

Mechanical engineering is used in mechanical processes such as: bike locks; aircraft carriers; children's toys; hybrid car engines; wheelchairs; sailboats; and medical devices. People in the mechanical engineering profession work in nearly every area of technology from aerospace and automotive to computers and manufacturing.

Career Opportunities

Employment of mechanical engineering technicians is projected to grow two percent through 2024.* Mechanical engineering technicians work in a variety of industries. Job opportunities will differ by industry. Prospects may be best for those who stay informed regarding the most recent advances in technology.

*Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2016-17 Edition*, Mechanical Engineering Technicians, on the internet at <http://www.bis.gov/ooh/architecture-and-engineering/mechanical-engineering-technicians.htm> (Visited Sept. 23, 2016).

Lakeland's Program

Lakeland's Mechanical Engineering Technology program is accredited by the Accreditation Board for Engineering and Technology (ABET) which is the recognized organization that sets the standard for programs in applied science, computing, engineering and engineering technology. Programs with ABET accreditation, allow students and employers to be confident knowing that a program meets the quality standards that produce graduates prepared to enter a global workforce.

Students in Lakeland's program learn to tap into their creativity, use current technology, and apply principles of mathematics and science to solve problems encountered in mechanical engineering technologies. In the classroom, students will perform and evaluate lab experiments, interpret and report results and make recommendations for improvements.



Computer Aided Design (CAD) Concentration

Students may choose to further focus their mechanical engineering studies to emphasize CAD for layout, design and creating drawings in mechanical and industrial application. This degree concentration is approved by the Alliance for Working Together (thinkmfg.org) to meet employment needs throughout Northeast Ohio.

Certificates

Earning certificates are short-range goals for students who plan to pursue the mechanical engineering technology degree. Upon completing the two certificates below, students may enroll for the third and fourth semesters to complete either the Mechanical Engineering Technology Associate of Applied Science degree or the CAD concentration degree or the manufacturing degree.

- Engineering Technology Foundations Certificate
- Mechanical and Manufacturing Technology Specialist Certificate

The Lakeland Advantage

- Expert classroom instruction and hands-on training using state-of-the-art equipment and the latest industry-standard software.
- Paid cooperative education field experience, and visits to area organizations and project sites to gain first-hand knowledge of the industry.
- Industry-recognized program with accreditation through ABET.
- Students will save on tuition when they transfer Lakeland credits to area bachelor's degree engineering programs.



Mechanical Engineering Technology Degree

Mechanical Engineering Technology Degree (9440)

This degree is designed to prepare a student to design and analysis of mechanical elements. The program prepares students for immediate employment as a technician. Students will learn to use creativity, current technology, and principles of mathematics and applied science to solve problems encountered in mechanical engineering technologies. Students will perform and evaluate lab experiments, interpret and report results and make recommendations for improvements.

NOTE: Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.

First Semester:

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
		19

Second Semester:

CIMN 1210	Materials Processing	3
ENGL 1121	English Composition - Technical Focus	3
MATH 1201	Technical Mathematics II	4
MECT 1600	Geometric Dimensioning and Tolerancing	2
MECT 2110	Engineering Mechanics I	3
PHYS 1200	Applied Physics II	3
		18

Third Semester:

CADT 2100	Introduction to SolidWorks	3
COMM 1050**	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
MECT 2210	Engineering Mechanics II	3
MECT 2230	Strength of Materials	3
Choose course(s) from the Arts and Humanities Electives list.		3
		14

Fourth Semester:

CIMN 1160	Applied Electricity	2
CIMN 2390	Fluid Power Technology	3
CIMN 2875	Design and Manufacturing Capstone	3
MECT 2600	Design of Machine Elements	2
QENT 1200	Quality Concepts and Techniques	2
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
		15
Program Total: 66		

*English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Computer Aided Design Concentration Degree

Computer Aided Design Concentration Degree (9444)

This concentration emphasizes using Computer Aided Design for layout, design and creating drawings in mechanical and industrial application. This degree is approved by the Alliance for Working Together (thinkmfg.org) to meet employment needs throughout Northeast Ohio.

NOTE: Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.

First Semester:

CADT 1100	Introduction to AutoCAD	3
COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
CIMN 1110	Machining Processes	3
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1001	Introduction to Technical Mathematics	4
		18

Second Semester:

CADT 1500	Advanced AutoCAD	3
CIMN 1160	Applied Electricity	2
CIMN 1210	Materials Processing	3
MATH 1101	Technical Mathematics I	4
MECT 1150	Technical Communications	3
MECT 1600	Geometric Dimensioning and Tolerancing	2
		17

Third Semester:

CADT 2100	Introduction to SolidWorks	3
CIMN 2240	Jig and Fixture Design I	3
MECT 2250	Mechanism Design	3
PHYS 1100	Applied Physics I	3
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
		15

Fourth Semester:

CADT 2500	Advanced SolidWorks	3
CIMN 2875	Design and Manufacturing Capstone	3
PHYS 1200	Applied Physics II	3
QENT 1200	Quality Concepts and Techniques	2
Choose course(s) from the Arts and Humanities Electives list.		3
		14
Program Total: 64		

*Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

**English course selection is based on placement test results (ENGL 1111 is 4 credits; only 3 credits apply to the degree).

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Mechanical Engineering Technology Certificates

Mechanical Engineering Technology Certificates

- AutoCAD Operator Certificate
- CAD Design Certificate
- Engineering Technology Foundations Certificate*
- Mechanical and Manufacturing Technology Specialist Certificate*

*Pending approval by the Ohio Department of Higher Education

AutoCAD Operator Certificate (4443)

CADT 1100	Introduction to AutoCAD	3
CADT 1500	Advanced AutoCAD	3
ENGR 1000	Introduction to Engineering Technology	2

Certificate Total: 8

CAD Design Certificate (4442)

CADT 1100	Introduction to AutoCAD	3
CADT 1500	Advanced AutoCAD	3
CADT 2100	Introduction to SolidWorks	3
CADT 2500	Advanced SolidWorks	3
ENGR 1000	Introduction to Engineering Technology	2

Certificate Total: 14



For more information

1.800.589.8520 • lakelandcc.edu

Debbie Lozano, Professor and Co-Chair Mechanical Engineering Technology and Computer Integrated Manufacturing Technology
440.525.7279 • dlozano@lakelandcc.edu

Engineering Technology Foundations Certificate (4444)

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
COMM 1050*	Fundamentals of Public Speaking	2

OR

COMM 1150	Fundamentals of Interpersonal Communication	
ENGL 1110**	English Composition I (A)	3

OR

ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
MATH 1001***	Introduction to Technical Mathematics	4

Certificate Total: 17

*Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.

**English course selection is based on placement test results (ENGL 1111 is 4 credits; only 3 credits apply to the certificate).

***Successful completion of MATH 1001 or placement into MATH 1101.

For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit lkn.lakelandcc.edu/go/ge?g=4444.

Mechanical and Manufacturing Technology Specialist Certificate (4445)

Completion of the Engineering Technology Foundations Certificate	17	
CADT 2100	Introduction to SolidWorks	3
CIMN 1160	Applied Electricity	2
CIMN 1210	Materials Processing	3
MATH 1101	Technical Mathematics I	4
MECT 1600	Geometric Dimensioning and Tolerancing	2
PHYS 1100	Applied Physics I	3

Certificate Total: 34

For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit lkn.lakelandcc.edu/go/ge?g=4445.

Curriculum and program requirements are subject to change. Find the most up-to-date information in the college catalog, available on the website at lakelandcc.edu.

Quality Education

Lakeland prepares you for a high-demand career or for transfer to a four-year college or university. Professors at Lakeland are experts in their fields with real-world experience. Small class sizes allow for personalized attention.

Affordable Tuition

Save thousands on your college education. Lakeland's tuition is about one-third the cost of most four-year schools. Financial assistance is available, including federal and state grants, scholarships, loans, and work study employment.

Convenience

Lakeland offers convenient day, evening and weekend class times, and a growing number of online courses. The main campus in Kirtland is only 20 miles northeast of Cleveland. Classes are also offered in Madison.

Focus on Students

Lakeland offers a variety of student services to help you succeed, such as counseling, tutoring, wireless computer labs, career services, free parking, and affordable child care.

Accreditation

Lakeland Community College is accredited through the Higher Learning Commission (HLC) and participates in the Academic Quality Improvement Program (AQIP). The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1413, phone: 800.621.7440, hlcommission.org.

Lakeland
COMMUNITY COLLEGE