



## ASSOCIATE OF SCIENCE

# PRE-ENGINEERING – MECHANICAL ENGINEERING

**2021 Catalog**  
Effective Summer 2020

# 4054

*The catalog in force is assigned to students based on the academic year they first applied to the college, and changes only when students change their major or request the change in writing. Refer to Policy No. 3357:15-13-28.*

*Engineering Technologies Division*

*Engineering Technology Department*

## ARTICULATING TO A BS IN MECHANICAL ENGINEERING WITH THE UNIVERSITY OF AKRON and UNIVERSITY OF MOUNT UNION

Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
<b>FRESHMAN EXPERIENCE</b>				
SSC101	Student Success Seminar^^	1	<i>Take first semester</i>	
<b>WRITTEN &amp; ORAL COMMUNICATION</b>				
ENG124	College Composition^	3	Co-ENG024 <b>or</b> Co-ENG011 <b>or</b> Proficiency	
<b>SOCIAL &amp; BEHAVIORAL SCIENCES</b>				
BUS221	Microeconomics^	3	IDS102 <b>or</b> Proficiency	
SOC225	Cultural Diversity	3		
<b>ARTS &amp; HUMANITIES</b>				
HIS122	U.S. History II from 1877	3		
PHL122	Ethics	3		
<b>SCIENCES &amp; MATHEMATICS</b>				
CHM141	General Chemistry I (lab)^▲	5	(CHM101 <b>or</b> Proficiency) <b>or</b> (MTH024 <b>or</b> MTH025 <b>or</b> Proficiency)	
CHM142	General Chemistry II (lab)	5	CHM141	
MTH135	Precalculus^ – <i>A student may take MTH125 (College Algebra) and MTH130 (Trigonometry) over two semesters to satisfy this requirement.</i>	5	MTH025 <b>or</b> Proficiency	
MTH223	Analytical Geometry and Calculus I^*	4	MTH135 <b>or</b> (MTH125 and MTH130) <b>or</b> Proficiency	
MTH224	Analytical Geometry and Calculus II	4	MTH223	
<b>CONCENTRATION CORE</b>				
MTH225	Analytical Geometry and Calculus III	4	MTH224	
PHY221	General Physics I w/Calculus (lab)	5	MTH223 <b>and</b> MTH224	
CST121	Modeling and Simulation	3	MTH221 <b>or</b> MTH223	
DET125	Basic AutoCAD	3		
MET123	Material Science	3		
MET124	Statics and Strength of Materials	4	Pre-Co-PHY121 <b>or</b> Pre-Co-PHY221	
MET221	Advanced Strength of Materials	2	MET124	
<b>TOTAL CREDIT HOURS</b>		<b>63</b>		

^Based on SSC placement scores

^^To promote student success, this course should be taken in the first semester

▲Because of the strong emphasis on science in this major, applicants must have successfully completed Chemistry and Biology in high school. Students who did not complete the courses in high school, and those who prefer to refresh their knowledge of the material, should complete the listed pre-requisites.

\*Students who test directly into Analytical Geometry and Calculus I should contact the Math Department Chair for the possibility of receiving credit for

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Precalculus.

Course Sequence

The semester-by-semester listing below provides the normal scheduling option for part-time associate degree students who plan to finish in eight semesters.

<u>First Semester</u>		<u>Credit Hours</u>	<u>Pre- or Co-requisites</u>
SSC101	Student Success Seminar^^	1	<i>Take first semester</i>
MTH135	Precalculus^ – <i>A student may take MTH125 (College Algebra) and MTH130 (Trigonometry) over two semesters to satisfy this requirement.</i>	<u>5</u>	MTH025 <b>or</b> Proficiency
		<b>6</b>	
<u>Second Semester</u>			
ENG124	College Composition^	3	Co-ENG024 <b>or</b> Co-ENG011 <b>or</b> Proficiency
MTH223	Analytical Geometry and Calculus 1^*	<u>4</u>	MTH135 <b>or</b> (MTH125 and MTH130) <b>or</b> Proficiency
		7	
<u>Third Semester</u>			
PHL122	Ethics	3	
CHM141	General Chemistry I (lab)^▲	<u>5</u>	(CHM101 <b>or</b> Proficiency) <b>or</b> (MTH024 <b>or</b> MTH025 <b>or</b> Proficiency)
		<b>8</b>	
<u>Fourth Semester</u>			
MTH224	Analytical Geometry and Calculus II	4	MTH223
CHM142	General Chemistry II (lab)	<u>5</u>	CHM141
		<b>9</b>	
<u>Fifth Semester</u>			
SOC225	Cultural Diversity	3	
PHY221	General Physics I w/Calculus (lab)	<u>5</u>	MTH223 <b>and</b> MTH224
		<b>8</b>	
<u>Sixth Semester</u>			
MTH225	Analytical Geometry and Calculus III	4	MTH224
MET124	Statics and Strength of Materials	<u>4</u>	Pre-Co-PHY121 <b>or</b> Pre-Co-PHY221
		<b>8</b>	
<u>Seventh Semester</u>			
BUS221	Microeconomics^	3	IDS102 <b>or</b> Proficiency
CST121	Modeling and Simulation	3	MTH221 <b>or</b> MTH223
MET221	Advanced Strength of Materials	<u>2</u>	MET124
		<b>8</b>	
<u>Eighth Semester</u>			
MET123	Material Science	3	
HIS122	U.S. History II from 1877	3	
DET125	Basic AutoCAD	<u>3</u>	
		<b>9</b>	
	<b>TOTAL CREDITS</b>	<b>63</b>	

^Based on SSC placement scores

^^To promote student success, this course should be taken in the first semester

▲ Because of the strong emphasis on science in this major, applicants must have successfully completed Chemistry and Biology in high school. Students who did not complete the courses in high school, and those who prefer to refresh their knowledge of the material, should complete the listed pre-requisites.

\*Students who test directly into Analytical Geometry and Calculus I should contact the Math Department Chair for the possibility of receiving credit for Precalculus.

**PART-TIME STUDENT ADVISING NOTES**Academic Advising

Students should make an appointment to see their advisor before registering for classes each semester. They should have prepared a completed registration form, including courses they wish to take, prior to this meeting.

**The University of Akron**Elective Additional Credit

Bridge courses that can be taken at Stark State College, prior to attending The University of Akron, that apply towards The University of Akron BS Degree: COM121 Effective Speaking, ENG221 Technical Report Writing, PHY222 General Physics II w/Calculus, and MTH227 Ordinary Differential Equations. If you plan on taking additional courses at Stark State College beyond this list, we recommend you verify transferability with a University of Akron advisor prior to taking the course. Self-selection of courses and not following the approved degree program could adversely affect graduation, transfer to a 4-year institution, and financial aid. Visit Transferology at <http://www.transferology.com> to assist in developing a plan for transferring to another college or university. Students should select Ohio Transfer Module approved and TAG approved courses.

Bachelor's Degree

Bachelor's degree requirements and course transferability are controlled by the institution to which the student plans to transfer. Contact The University of Akron's Transfer Student Services Center (330-972-7009) during the first semester to discuss junior year Stark State College Associate of Science pre-engineering transition strategies to The University of Akron's Engineering BS programs.

**University of Mount Union**Summer 2

After completing the Pre-Engineering Program at Stark State College it is expected that you complete the Thermal Science (2 credits) and Fluid Mechanics I (2 credits) courses at the University of Mount Union to stay on track to complete the BS degree.

Elective Additional Credit

Bridge courses that can be taken at Stark State College, prior to attending the University of Mount Union, that apply towards the University of Mount Union's BS Degree: Foreign Language I, Foreign Language II, MET223 Dynamics, PHY222 General Physics II w/Calculus, and MTH227 Ordinary Differential Equations. If you plan on taking additional courses at Stark State College beyond this list, we recommend you verify transferability with a University of Mount Union advisor prior to taking the course. Self-selection of courses and not following the approved degree program could adversely affect graduation, transfer to a 4-year institution, and financial aid. Visit Transferology at <http://www.transferology.com> to assist in developing a plan for transferring to another college or university. Students should select Ohio Transfer Module approved and TAG approved courses.

Bachelor's Degree

Bachelor's degree requirements and course transferability are controlled by the institution to which the student plans to transfer. Contact the University of Mount Union's Transfer Student Services Center number (330-829-8238) during the first semester to discuss junior year Stark State College Associate of Science pre-engineering transition strategies to the University of Mount Union's Engineering BS programs.

Advising:

You are highly encouraged to contact Dr. Osama Jadaan, Chair of the Department of Engineering at the University of Mount Union during your first year at Stark State for curricular advising to stay on track to graduate with a BS degree. You can email him at [jadaanos@mountunion.edu](mailto:jadaanos@mountunion.edu) or call 330-823-5989.