

ENGINEERING, AS

Program Code: Engineering-AS

Program Description

The Associate of Science, Engineering is a two-year transferable program leading to an Associate of Science in Engineering. The degree is designed for students planning to obtain a four-year engineering degree. Engineering is the practical application of scientific theory and principles. This program develops a strong foundation in mathematics and physical science while providing an introduction to the fundamental aspects of engineering. Students who complete the associate degree can transfer to other colleges or universities in many engineering disciplines including civil, chemical, computer, electrical, geological, mechanical, metallurgical, mining, computer science and engineering physics.

Engineering Career Map (<https://sites.tmcc.edu/flipbook/career-maps/>)

Recommended Course Schedule

1st semester		Units
ENG 101	Composition I	3
ENGR 100	Introduction to Engineering Design	3
Fine Arts / Diversity ⁶		3
MATH 181	Calculus I	4
Semester Total		13
2nd semester		Units
PHYS 180 & 180L	Physics for Scientists and Engineers I and Physics for Scientists/Engineers Lab I	3
ENG 102	Composition II	3
CHEM 121	General Chemistry I	4
MATH 182	Calculus II	4
Semester Total		14
3rd semester		Units
ENGR 241	Statics	3
Humanities (Recommend CH 203)		3
MATH 283	Calculus III	4
PHYS 181 & 181L	Physics for Scientists and Engineers II and Physics for Scientists/Engineers Lab II	4
Electives		3
Semester Total		17
4th semester		Units
ME 242	Dynamics (Dynamics)	3
EE 220	Circuits I	4
MATH 285	Differential Equations	3
Social Science (Recommend ECON 102)		3
Electives		3
Semester Total		16
Total Units		60

⁶ See program recommendations or requirements.

Program Requirements

Associate of Science degrees are designed for students who plan to transfer to a four-year college or university.

To earn an AS degree, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 units within the college.
3. Satisfy General Education requirements for the AS (<https://catalog.tmcc.edu/degrees-certificates/general-education/as/>).
4. Have no financial or library obligation to the college.

Code	Title	Units
General Education Requirements		
<i>English</i>		3-6
Must include ENG 102 or ENG 114 ¹		
<i>Fine Arts</i>		3
Recommend Diversity		
<i>Humanities</i>		3
Recommend		
CH 203	American Experiences and Constitutional Change	
<i>Mathematics</i>		[3]
Required:		
MATH 181	Calculus I ²	4
<i>Science</i>		[6]
Required:		
CHEM 121	General Chemistry I ²	4
PHYS 180 & 180L	Physics for Scientists and Engineers I and Physics for Scientists/Engineers Lab I ²	4
<i>Social Science</i>		3
Recommended:		
ECON 102	Principles of Microeconomics	
Additional College Requirements		
<i>Diversity</i> ³		[3]
<i>Science</i>		[6]
PHYS 181 & 181L	Physics for Scientists and Engineers II and Physics for Scientists/Engineers Lab II ²	4
<i>U.S. and Nevada Constitutions</i>		[3]
Degree Requirements		
ENGR 100	Introduction to Engineering Design	3
MATH 182	Calculus II ²	4
MATH 283	Calculus III ²	4
MATH 285	Differential Equations ²	3
Elective Requirements		
Select 15 - 18 units from the following based on appropriate engineering specialty. Can include co-admission at UNR. ⁴		15-18
BIOL 190A & BIOL 190L	Introduction to Cell and Molecular Biology and Introduction to Cell and Molecular Biology Laboratory (biomedical, chemical, civil, environmental)	

CHEM 122	General Chemistry II (biomedical, materials science, environmental, engineering physics)
CPE 201	Digital Design (biomedical, electrical, computer, engineering physics)
IDS 299	General Internship Program
ECON 102	Principles of Microeconomics (biomedical, chemical, materials science, electrical) ⁵
EE 220	Circuits I (biomedical, chemical, materials science, engineering physics, mechanical)
ENGR 110	Introduction to Renewable Energy (renewable energy minor)
GEOL 101	Geology: Exploring Planet Earth (environmental)
MATH 330	Linear Algebra (biomedical, electrical)
ENGR 241	Statics
ME 242	Dynamics (Dynamics)

Courses in the following disciplines: Chemical Engineering, Civil and Environmental Engineering, Computer Engineering, Computer Science, Electrical Engineering, Geological Engineering, Geology, Materials Science and Engineering, Mechanical Engineering, Metallurgical Engineering, Mining Engineering

Total Units **60**

- ¹ If you place into ENG 102 or ENG 114, the additional 3 required units will become elective credit.
- ² Must maintain a "C" or higher in these courses.
- ³ Course may also count toward degree requirements. Please consult with Academic Advisement.
- ⁴ Consult with Academic Advising for a list of classes for specific engineering specialties and information regarding co-admission at UNR.
- ⁵ ECON 102 can only count for a Social Science general education course OR as a program elective. It cannot be used for both.

Program Outcomes

Students completing the degree will:

PSLO1: Describe and apply the engineering design process.

PSLO2: Demonstrate effective communication skills via writing and presentations, work effectively in teams, and perform basic computational skills appropriate to the engineering field.

Transfer Agreements

AA/AS degrees are designed for students who plan to transfer to a four-year college or university. General information about general transfer agreements can be found on the Academic Advisement website (<https://www.tmcc.edu/advisement/transfer-students/transfer-agreements/>). Students who intend to transfer to another college or university should speak with a TMCC Academic Advisor and consult with that institution. The transfer institution determines how TMCC courses will transfer. TMCC has agreements with the following institutions towards a bachelor's degree in the same or similar discipline.

- University of Nevada, Reno (<https://www.unr.edu/admissions/transfer/credits/transfer-agreements/>)