

ENGINEERING - TRANSFER - DEGREE

Associate of Science in Engineering

Faculty Adviser

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The Engineering transfer curriculum offered at MHCC is designed to closely follow the pre-engineering program at regional universities and to meet the requirements for an Associate of Science degree. This course plan is tailored for civil and mechanical engineering majors. However, the student should meet with his or her adviser to create an educational plan that meets his or her specific needs.

Curricular Outcomes

At the completion of this curriculum, students should be able to:

- Apply mathematics, science and engineering skills
- Design and conduct experiments, as well as analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints
- Function on multidisciplinary teams
- Identify, formulate and solve engineering problems
- Describe professional and ethical responsibility

The MHCC curriculum has entry-level expectations of students for skills in reading, writing and mathematics.

Note: This plan is specifically designed for transfer to a four-year institution and is not intended for students who seek direct entry into the job market after completion of an associate degree.

For the most part, courses that fulfill general education requirements can be taken in any term. Students should work with the faculty adviser(s) to create a custom academic plan based on course placement levels, career goals, and full time/part time status.

Admitted students may also log on to Navigate (<https://mhcc.campus.eab.com/home/>) to start the process of building an academic plan based on this major and can notify an adviser for review.

First Quarter

Fall		Credits
CH221	General Chemistry I	5
GE101	Engineering Orientation	4
MTH251	Calculus I: Differential Calculus	5
WR121Z	Composition I ★	4
Credits		18

Second Quarter

Winter		
CH222	General Chemistry II	5

COMM111Z	Public Speaking ★	4
GE115 or ENGR248	Engineering Graphics or Engineering Graphics: Solidworks	3
MTH252	Calculus II: Integral Calculus	5
Credits		17

Third Quarter

Spring		
GE102	Engineering Computations	3
MTH261	Linear Algebra	4
WR227Z	Technical Writing ★	4
Arts and Letters requirement (https://catalog.mhcc.edu/degree-certificate-requirements/as-engineering/#arts-letters)		3
Social Science requirement (https://catalog.mhcc.edu/degree-certificate-requirements/as-engineering/#social)		3
Credits		17

Fourth Quarter

Fall		
ENGR211	Statics	4
MTH254	Calculus IV: Multivariable/ Vector Calculus Part 1	5
PH211	General Physics with Calculus I	5
Credits		14

Fifth Quarter

Winter		
ENGR213	Strength of Materials	4
ENGR201 (winter) for Mechanical Engineering transfer, or ET150 (spring) for Civil Engineering transfer		4-5
PH212	General Physics with Calculus II	5
Social Science requirement (https://catalog.mhcc.edu/degree-certificate-requirements/as-engineering/#social)		3-4
Health and Physical Education requirement (https://catalog.mhcc.edu/degree-certificate-requirements/as-engineering/#health)		3
Credits		19-21

Sixth Quarter

Spring		
ENGR212	Dynamics	4
ET150 (Spring) for Civil Engineering Transfer, or ENGR201 (Winter) for Mechanical Engineering transfer.		
MTH256	Differential Equations	5
PH213	General Physics with Calculus III	5
Arts and Letters requirement (https://catalog.mhcc.edu/degree-certificate-requirements/as-engineering/#arts-letters)		3
Credits		17

Total Credits **102-104**

Note: Not every course required by the various programs at different schools is offered at MHCC.

Transfer Schools

- Oregon State University (<http://engineering.oregonstate.edu/>)
- Oregon Institute of Technology (<http://www.oit.edu/academics/degrees/>)

- Portland State University (<http://www.pdx.edu/cecs/>)
- Washington State University (<http://www.vcea.wsu.edu/>)

Exploring **engineering (transfer)** as your major? Learn more with MHCC's Career Coach (<https://mhcc.lightcastcc.com/programs/engineering-degree/209250/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>), which covers: skills needed for each career, wages, employment rates, and live job postings in the Greater Multnomah County Area.

Careers related to engineering:

- Civil Engineers (<https://mhcc.lightcastcc.com/careers/civil-engineer/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)
- Mechanical Engineers (<https://mhcc.lightcastcc.com/careers/mechanical-engineer/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)
- Industrial Engineers (<https://mhcc.lightcastcc.com/careers/industrial-engineer/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)
- Materials Engineers (<https://mhcc.lightcastcc.com/careers/materials-engineer/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)
- Solar Energy Systems Engineers (<https://mhcc.lightcastcc.com/careers/solar-energy-systems-engineer/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)
- Architectural and Engineering Managers (<https://mhcc.lightcastcc.com/careers/architectural-and-engineering-manager/?region=Greater%20Multnomah%20County%20Area&radius=100%20miles>)