

AS: Pre-Engineering

2013 - 2014

The Associate of Science degree program in (Pre) Engineering is designed to prepare students for continued study in a baccalaureate degree program in engineering.

Program Courses

Course No.	Course Title	Credits	Goal Area	Comments/Substitution
ENGR1000	Introduction to Engineering and Design	3		

Subtotal 3

General Education Courses

Course No.	Course Title	Credits	Goal Area	Comments/Substitution
CHEM1061	Principles of Chemistry I	4		
CHEM1062	Principles of Chemistry II	4		
ECON1060	Principles of Economics Macro	3		
ENGL1201	College Writing I	4		
MATH1221	Calculus I	5		
MATH1222	Calculus II	5		
MATH2220	Calculus III	5		
MATH2300	Linear Algebra	3		
MATH2400	Differential Equations	3		
PHIL1020	Ethics	3		
PHYS1601	General Physics I	5		
PHYS1602	General Physics II	5		
BIOL1000, BIOL1001, BIOL1200 - 1 course:				
BIOL1000	Life Science <i>or</i>	4		
BIOL1001	Biology I <i>or</i>	4		
BIOL1200	Current Environmental Issues	4		
CSCI1120, CSCI1130, CSCI1190 - 1 course:				
CSCI1120	Programming in C/C++ <i>or</i>	4		
CSCI1130	Introduction to Programming in Java <i>or</i>	4		
CSCI1190	Introduction to C++ Programming	4		

Subtotal 57

Total Credits Required 60

Program Outcomes

Knowledge of Human Cultures and the Physical and Natural World:

- Understand the major principles of calculus-based mathematics and their relationship to engineering problems and solutions.
- Understand the major principles of general physics and chemistry and their relationship to engineering problems and solutions.

Intellectual and Practical Skills:

- Appropriately communicate technical material orally and in writing.

Personal and Social Responsibility:

- Appropriately and safely use laboratory equipment in physics and chemistry coursework Integrative Learning

Integrative Learning:

- Apply the major principles of calculus-based mathematics to engineering problems and solutions.
- Apply the major principles of general physics and chemistry to their engineering courses.

Notes

Engr 1200 - Engineering Graphics is an additional recommended course.

Transfer Information

If you are planning on transferring to another institution, follow the guidelines available on our transfer resources web page to help you plan the process: [Transfer Information](#)

Degree Information

The Associate of Science (A.S.) degree is intended for students whose primary goal is to complete the credentials for a specific career and/or prepare for transfer to complete a bachelor's degree at a college or university with whom North Hennepin Community College has an articulation agreement. The A.S. degree provides a balance of general education courses and the required scientific, professional or technical courses in the degree program.

A student shall:

- Earn a minimum of 60 semester credits as required in the program, with a grade point average of 2.00 (C) or above in courses taken at North Hennepin Community College. Specific programs may have additional requirements or a higher minimum grade point average.
- Earn a minimum of 20 semester credits at North Hennepin Community College. A student must complete at least 50% of career specific courses at North Hennepin Community College.
- Earn 30 credits in at least 6 Minnesota Transfer Curriculum (MnTC) goal areas.
- Earn 30 professional/technical credits.
- Have four years to complete the graduation requirements as published in the catalog in effect at the time of their initial enrollment. Students taking more than four years to complete their graduation requirements may follow any catalog published during the four-year period preceding their graduation.

Completion of an A.S. degree fulfills the Goal Area 2 requirement of the Minnesota Transfer Curriculum (MnTC).

Developmental Courses

Some students may need preparatory course(s) in Math and/or English. Courses numbered below 1000 will not apply toward a degree.

Equal Opportunity Employer and Disability Access Information

North Hennepin Community College is a member of Minnesota State Colleges and Universities system and an equal opportunity employer and educator. This document is available in alternative formats to individuals with disabilities by calling 763-493-0555 or through the Minnesota Relay Service at 1-800-627-3529.

Accreditation

North Hennepin Community College is accredited by the:
Higher Learning Commission of the North Central Association of Colleges and Schools
30 N. LaSalle Street, Suite 2400
Chicago, IL 60602-2504
1-800-621-7440

Career Opportunities

Information on careers, including salary and employment outlook data, is available on the [iseek](http://www.iseek.org) and Bureau of Labor Statistics websites: www.iseek.org and www.bls.gov.