Engineering Broad Field AS

The Engineering Broad Field Associate of Science degree is designed to prepare students for continued study in a bachelor's degree program in engineering.

Engineering Broad Field Curriculum

Curriculum

Program Courses

Course Code	Title	Course Outlines	Goal Areas	Credits
Engineering Speciality Courses - Select a minimum of 4 classes 12 credits from the following:				
ENGR 1000	Introduction to Engineering and Design **or**	**View-ENGR 1000**	n/a	3
ENGR 1200	Engineering Graphics **or**	**View-ENGR 1200**	n/a	3
ENGR 2201	Introduction to Digital Logic **or**	**View-ENGR 2201**	n/a	2
ENGR 2301	Statics **or**	**View-ENGR 2301**	n/a	3
ENGR 2302	Mechanics of Materials **or**	**View-ENGR 2302**	n/a	3
ENGR 2303	Dynamics **or**	**View-ENGR 2303**	n/a	3
ENGR 2340	Thermodynamics **or**	**View-ENGR 2340**	n/a	3
ENGR 2410	Circuit Analysis **or**	**View-ENGR 2410**	n/a	4
CHEM 1062	Principles of Chemistry II **or**	**View-CHEM 1062**	n/a	4
CHEM 2061	Organic Chemistry I **or**	**View-CHEM 2061**	n/a	5
CHEM 2062	Organic Chemistry II **or**	**View-CHEM 2062**	n/a	5
MATH 2011	Probability and Statistics **or**	**View-MATH 2011**	n/a	4
MATH 2300	Linear Algebra	**View-MATH 2300**	n/a	4
CSCI 1120	Programming in C/C++ **or**	**View-CSCI 1120**	n/a	4
CSCI 1130	Introduction to Programming in Java (CS0)	**View-CSCI 1130**	n/a	4

General Education Courses

Course Code	Title	Course Outlines	Goal Areas	Credits
CHEM 1061	Principles of Chemistry I **and**	**View-CHEM 1061**	n/a	4
MATH 1221	Calculus I **and**	**View-MATH 1221**	n/a	5
MATH 1222	Calculus II **and**	**View-MATH 1222**	n/a	5
MATH 2220	Calculus III **and**	**View-MATH 2220**	n/a	5
MATH 2400	Differential Equations **and**	**View-MATH 2400**	n/a	4
PHYS 1601	General Physics I **and**	**View-PHYS 1601**	n/a	5
PHYS 1602	General Physics II	**View-PHYS 1602**	n/a	5
College Writing I				
ENGL 1200	Gateway College Writing **or**	**View-ENGL 1200**	n/a	4
ENGL 1201	College Writing I	**View-ENGL 1201**	n/a	4

MnTC Electives

MnTC Electives Humanities, History, Behavioral Social Sciences: Two courses that satisfy Goal Areas 5 6. At least one of these courses must also satisfy one Goal Area 7, 8, 9, 10
History the Social Behavioral Sciences (Goal Area 5) ANTH1010(3), ANTH1130(3), ANTH1140(3), ECON1050(3), ECON1060(3), ECON1070(3), GCST1501(3), GCST1504(3), GCST1505(3), GCST1964(4), GWS1501(3), GWS1504(3) GWS1505(3), HIST1010(3), HIST1020(3), HIST1030(3), HIST1110(3), HIST1120(3), HIST1130(3), HIST1140(3), HIST1200(3), HIST1210(3), HIST1220(3), HIST1230(3), HIST1240(3), HIST1270(3), HIST1700(3), HIST1800(3), HIST1900(1), HIST2500(3), HIST2600(3), HIST2700(3), POLS1100(3), POLS1140(3), POLS1600(3), POLS1700(3), POLS2130(3), PSYC1110(3), PSYC1150(3), PSYC1160(4), PSYC1165(3), PSYC1170(3), PSYC1210(3), PSYC1220(3), PSYC1250(4), PSYC2110(3), PSYC2320(3), PSYC2330(3), PSYC2340(3), PSYC2350(3), SOC1110(3), SOC1710(3), SOC1750(3), SOC2110(3), SOC2200(3), SOC2210(3), SOC2410(3), SOC2730(3), SOC2750(3) The Humanities Fine Arts (Goal Area 6) ARBC1030(3), ART1010(1), ART1020(1), ART1040(3), ART1050(3), ART1101(3), ART1102(3), ART1160(3), ART1170(3), ART1270(3), ART1301(3), ART1302(3), ART1310(3), ART1320(3), ART1340(3), ART1341(3), ART1361(3), ART1362(3), ART1401(3), ART1402(3), ART1550(3), ART1601(3), ART1602(3), ART1650(3), ART1770(3), ART1810(1), ART1820(2), ART2180(3), ART2190(3), ART2300(2), ART2611(3), ART2612(3), ART2640(3), ART2740(1), ART2750(1), ART2780(1), ART2781(1), ART2782(1), ART2800(1), ART2820(1), ART2860(1), ART2900(1), ART2970(1), COMM1550(3), ENGL1150(3), ENGL1250(2), ENGL1400(3), ENGL1450(3), ENGL1900(3), ENGL1950(3), ENGL2010(3), ENGL2020(3), ENGL2030(3), ENGL2150(3), ENGL2250(3), ENGL2270(3), ENGL2300(3), ENGL2310(3), ENGL2320(3), ENGL2330(3), ENGL2340(3), ENGL2350(3), ENGL2360(3), ENGL2370(3), ENGL2380(3), ENGL2390(3), ENGL2400(3), ENGL2410(3), ENGL2450(3), ENGL2460(3), ENGL2500(3), ENGL2540(3), ENGL2550(3), ENGL2560(3), ENGL2570(3), ENGL2580(3), ENGL2590(3), ENGL2900(3), ENGL2950(3), GCST1030(3), GCST1978(3), GCST225(3), GCST2410(3), GERM1030(3), INTD1030(3), MUSC1130(1), MUSC1160(1), MUSC1170(1), MUSC1180(1), MUSC1190(2), MUSC1200(3), MUSC1220(3), MUSC1241(3), MUSC1242(3), MUSC1300(3), MUSC1320(1), MUSC1350(3), MUSC1370(3), MUSC1500(2), MUSC1501(2), MUSC1502(2), MUSC1510(1), MUSC1560(1), MUSC1600(2), MUSC1610(1), MUSC1800(2), MUSC1801(2), MUSC1802(2), MUSC1810(1), MUSC1830(1), MUSC1850(1), MUSC1860(1), MUSC1870(1), MUSC2010(2), MUSC2170(3), MUSC2180(3), MUSC2241(3), MUSC2242(3), MUSC2970(1), PHIL1010(3), PHIL1020(3), PHIL1030(3), PHIL1040(3), PHIL1060(3), PHIL1070(3), PHIL1080(3), PHIL1120(3), PHIL1220(3), PHIL1230(3), SPAN1030(3), SPAN2201(5), SPAN2202(5), TFT1200(3), TFT1210(3), TFT1250(3), TFT1260(3), TFT1270(3), TFT1280(3), TFT1310(3), TFT1320(3), TFT1350(3), TFT1500(3), TFT1510(3), TFT1520(3), TFT1531(3), TFT1532(3), TFT1540(3), TFT1600(1), TFT1610(1), TFT2010(3), TFT2500(3), TFT2950(1)

Total Credits Required	**60**

Program Overview

2023-2024

An Associate of Science (AS) in Engineering Broad Field is designed to prepare students for transfer to a 4-year program in a variety of engineering majors.

Program Outcomes

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (ELO 1; 2a, d; 4a, d, e) Apply engineering design processes to provide engineering solutions which take into consideration multiple needs. (ELO 1; 2a, d; 4a, d, e) Conduct experiments, as well as analyze and interpret results from these experiments. (ELO 2 a, d, e; ELO 4d) Communicate problem solutions, design solutions, and experimental findings, analysis, and interpretations in a variety of formats. (ELO 2b, c)

Program Maps

Program roadmaps provide students with a guide to understand the recommended course sequence to complete their degree.

- **Engineering Broad Field AS Full Time**
- **Engineering Broad Field AS Part Time**

Career Opportunities

Information on careers, including salary and employment outlook data, is available at Minnesota State and the Bureau of Labor Statistics websites: **careerwise.minnstate.edu** and **www.bls.gov.**

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 15 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 7634930555 or through the Minnesota Relay Service at 18006273529.

Accreditation

North Hennepin Community College is accredited by the Higher Learning Commission (**hlcommission.org**), an institutional accreditation agency recognized by the U.S. Department of Education.
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