

Engineering Science (EGS)

THE DEGREE: Associate of Science

THE PROGRAM: provides a base of mathematics, science, and engineering fundamentals common to the first two years of a baccalaureate degree engineering program. Engineering electives provide special courses to suit your particular interest in civil/environmental, electrical/computer, mechanical/industrial, or chemical engineering. Greenfield Community College participates in the College of Engineering Consortium Agreement with University of Massachusetts/Amherst.

YOUR NEXT STEP: transfer as an engineering major to a baccalaureate degree institution. GCC graduates have successfully transferred to Northeastern University, Rensselaer Polytechnic Institute, Western New England College, and Worcester Polytechnic Institute.

REQUIRED COURSES	CREDITS
Computer Based Course (CIS 140, 150, 251, or 252) ①	3
ECO Elective ①	3
<i>ECO 101 Principles of Macroeconomics,</i> <i>or ECO 102 Principles of Microeconomics</i>	
EGR 105 Introduction to Engineering, Science, Technology, and Society	3-4
EGR 107 Engineering Graphics	3-4
ENG 101, 103, or 105 English Composition I	3
ENG 112, 114, or 116 English Composition II	3
MAT 201 Calculus with Analytic Geometry I	3-4
MAT 202 Calculus with Analytic Geometry II	3-4
MAT 203 Multivariate Calculus	3-4
MAT Elective (advanced) ①	3-4
<i>MAT 204 Elementary Differential Equations</i> <i>or MAT 205 Elementary Linear Algebra</i>	
PHY 111 General Physics I with Calculus	4
PHY 112 General Physics II with Calculus.....	4
Electives with BC or HC advising code ①	6
Concentration Electives (see list on next page) ①	21-28
TOTAL 65-78	

Note: Courses shown with 3-4 credits refer to transfer credits, which vary depending on the transfer institution.

① Students must meet with the Engineering program coordinator to select courses for their specific situation. Some Concentration Electives will be taken at UMASS through our consortium agreement.

CONCENTRATION ELECTIVES, PROGRAM COORDINATOR
(continued on the next page)

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CONCENTRATION ELECTIVES – SEE PROGRAM COORDINATOR

Students, with help from their advisor or the Engineering Coordinator, must select their specific concentration electives. CHE 111 and CHE 112 are recommended except when not required by transfer institution. The selection should be based on the student's expected engineering major (chemical, civil, environmental, electrical, computer, industrial, or mechanical engineering) and on the requirements of the transfer baccalaureate institution. In most instances, the GCC courses will be accepted at the transferring institution. Courses from this list not accepted by the transferring institution will nevertheless provide valuable background knowledge to prepare students for similar courses at the baccalaureate institution

GENERAL ENGINEERING PROGRAM ADVISING GUIDE FOR GCC ASSOCIATE DEGREE

Fall – Freshman Year

Computer Based Course ①
 Physics w/ Calculus I (GCC PHY 111)
 Calculus I (GCC MAT 201)
 English Comp I (GCC ENG 101 or equivalent)
 Concentration Elective (GCC CHE 111) ①
 Engineering Orientation (GCC EGR 105)

Spring – Freshman Year

Physics w/ Calculus II (GCC PHY 112)
 Calculus II (GCC MAT 202)
 Economics Elective (ECO 101 or 102) ①
 Liberal Arts Elective (BC or HC) ①
 Engineering Graphics (GCC EGR 107)
 Concentration Elective ①

Fall – Sophomore Year

Concentration Elective ①
 Multivariate Calculus (GCC MAT 203)
 Concentration Elective ①
 Concentration Elective ①
 Liberal Arts Elective (BC or HC) ①

Spring – Sophomore Year

English Comp II (GCC ENG 112, 114, 116)
 Math Elective (GCC MAT 204 or 205) ①
 Concentration Elective ①
 Concentration Elective ①

NOTES:

Placement tests determine readiness for MAT and ENG courses, MAT 090, 105, 106, 107, 108 and ENG 090 and COL 090 may be required if present skills in these areas are insufficient.

The Concentration Electives are chosen on the basis of the specific Engineering field desired, and should be chosen with regard to the selected transfer institution. Chemistry is accepted as a Concentration Elective. Other Concentration Electives will most likely be taken off campus either at HCC, or UMASS, or through distance learning courses. Select these in conjunction with your advisor, and as approved by EGS program coordinator.

LIST OF POSSIBLE CONCENTRATION ELECTIVES:

For Electrical and Computer Engineering these could include: Circuits I, Circuits II, Data Structures & Algorithms, Hardware Org. & Design, Digital Logic, Advanced Computer Programming, Chemistry, Biology, etc.

For Mechanical Engineering these could include: Statics, Strength of Materials, Material Science, Thermodynamics, Material Design, Chemistry, etc.

For Civil & Environmental Engineering these could include: Statics, Strength of Materials, Material Science, Thermodynamics, Probability & Statistics in Civil Engineering, Civil Engineering Analysis, Environmental, Chemistry, etc.

For Chemical Engineering these could include: Chemistry I and II, Organic Chemistry I, Organic Chemistry II, Thermodynamics, Fluid Mechanics.

For Industrial Engineering these could include: Advanced Computer Programming Languages, Statics, Probability & Statistics, Material Science, Strength of Materials, Introduction to Mechanical Design, Chemistry, etc.

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PROGRAM COORDINATOR

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