

ENGINEERING SCIENCE AND TECHNOLOGIES
ENGINEERING SCIENCE (ENR)
(HEGIS 5609)

This program is for students planning to transfer upon graduation from Dutchess Community College to a four-year college granting a Bachelor of Science in an engineering discipline. Dutchess graduates readily transfer to established and respected educational institutions as third-year engineering students. Dutchess Community College's engineering science program is designed so that our students develop the skill set needed to succeed in competitive four-year engineering programs in a variety of engineering disciplines. Our engineering science program provides the appropriate mix of math, science, engineering, and liberal arts as benchmarked by ABET (Accreditation Board of Engineering and Technology) and recommended by TYESA (Two-Year Engineering Science Association). The Dutchess Community College Engineering Science program incorporates the following competencies: problem solving, design, teamwork, communication skills, quality and continuous improvement, and computer literacy.

Six advisement tracks are available to students to help them transfer to a specific engineering major at a four-year university or college.

- o Biomedical Engineering
- o Computer Engineering
- o Chemical Engineering
- o Electrical Engineering
- o Civil and Environmental Engineering
- o Mechanical and Aeronautical Engineering

It is recommended that students entering this program have completed high school Chemistry, Physics, and four units of high school Mathematics. Students without current college-preparatory courses in these areas may need more than two years to complete the engineering science program.

The Associates in Science (A.S.) degree is awarded upon completion of the requirements of this program.

Courses should be selected with an advisor.

Course No.	Descriptive Title	Cr.Hrs.
FIRST SEMESTER		
ENG 101	Composition I	3
CHE 121	General Chemistry I	4
MAT 221	Analytic Geometry and Calculus I	4
ENR 101	Introduction to Engineering	2
ENR 100	Engineering Technology Introductory Seminar	1
ENT 131	Technical Drawing	1
See footnote (a)	TOTAL	15
SECOND SEMESTER		
ENG 102	Composition II	3
WFE 101	Lifetime Wellness and Fitness	3
PHY 151	Engineering Physics I	4
MAT 222	Analytic Geometry and Calculus II	4
ENR 102	Computer Programming for Engineers (b)	3
See footnote (b)	TOTAL	17
THIRD SEMESTER		
PHY 152	Engineering Physics II	4
MAT 223	Analytic Geometry and Calculus III	4
ENR 208	Engineering Statics	3
	Technical elective (c)	3-4
BHS 103	Social Problems in Today's World	3
	TOTAL	17-18
FOURTH SEMESTER		
PHY 251	Engineering Physics III	4
MAT 224	Differential Equations	4
HIS 104, HIS 108, or HIS 121		3
	Advanced Technical Electives (d)	6-8
	TOTAL	17-19
	TOTAL CREDIT HOURS	66

a. In addition to the listed first semester course load, Electrical and Computer Engineering students should also take ELT 115. Biomedical and Chemical Engineering students should also take WFE 101.

b. In addition to the second semester course load, Biomedical and Chemical Engineering students should take CHE 122.

c. The courses that apply as introductory technical electives are ENR 201, ENR 215, BIO 101 and CHE 231.
 Biomedical Engineering take BIO 101
 Electrical Engineering take ENR 201
 Chemical Engineering take CHE 231
 Environmental Engineering by advisement
 Civil Engineering take ENR 215
 Mechanical Engineering take ENR 201
 Computer Engineering take ENR 201

d. The courses that apply as advanced technical electives are ENR 204, ENR 207, ENR 209, ELT 220, MAT 214, BIO 102, and CHE 232.
 Biomedical Engineering take BIO 102 and ENR 207
 Electrical Engineering ENR 209 and ELT 220
 Chemical Engineering take CHE 232 and ENR 207
 Environmental Engineering ENR 209 and by advisement
 Civil Engineering take ENR 209 and ENR 204
 Mechanical Engineering take ENR 209 and ENR 207
 Computer Engineering take ELT 220 and MAT 214