

# Engineering

## Associate of Science

**Purpose:** The demand for technically trained people is increasing rapidly in Virginia as well as throughout the world. The engineer is a most important member of the technical team which includes the scientist, technician, and skilled craftsman. Opportunities are unlimited for men and women in the field of engineering. Science is so diversified now that one may enter almost any specialization and find employment. The preparation for the engineering profession is based on a vigorous program especially in mathematics and science.

The associate of science degree major in Engineering is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in one of the following engineering fields: aerospace, agriculture, architecture, biomedical, chemical, civil, computer, electrical, environmental, industrial, materials, mechanical, mining, nuclear, or ocean.

**Admission Requirements:** General college curricular admission

**Program Notes:** Applicants shall have (a) completed placement testing and (b) met with their advisor to establish a planned course of study prior to being allowed to register for courses.

Satisfactory completion of the following high school units or their equivalent, at a minimum, is strongly recommended: four units of English, one unit of laboratory science (preferably physical science), one unit of social studies, and four units of mathematics (two units of algebra, one unit of plane geometry, one unit of advanced mathematics or trigonometry and solid geometry).

This program includes the courses usually required in the first two years of a baccalaureate engineering curriculum. The minimum number of credits required for graduation from the J. Sargeant Reynolds Community College Engineering AS degree program is 68. Students should consult with their engineering advisor at the earliest possible date to acquaint themselves with the requirements of the engineering program at the college or university to which transfer is planned.

**Computer Competency Requirement:** Students in this program will meet the college's computer competency requirement by passing the computer competency exam, administered in the testing centers on each campus, or by completing either ITE 115, Introduction to Computer Applications and Concepts, or CSC 155, Computer Concepts and Applications, or equivalent. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM				
COURSE	TITLE	LEC.	LAB.	CRS.

		<b>HRS.</b>	<b>HRS.</b>	<b>CRE.</b>
ENG 111	College Composition I	3	0	3
CHM 111 <sup>1</sup>	College Chemistry I	3	3	4
MTH 173	Calculus with Analytic Geometry I	5	0	5
EGR 124	Introduction to Engineering and Engineering Methods	3	0	3
SDV 100	College Success Skills	1	0	1
___ ___ <sup>2</sup>	Personal Wellness Elective	0-1	0-2	1
<b>TOTAL</b>		15-16	3-5	17
ENG 112	College Composition II	3	0	3
EGR 123 <sup>3</sup> or	Introduction to Engineering Design or	1	2	2
EGR 110 <sup>3</sup>	Engineering Graphics	2	2	3
EGR 140 or EGR ___ <sup>4</sup>	Engineering Mechanics – Statics or Engineering Elective	3	0	3
___ ___ <sup>2</sup>	Personal Wellness Elective	0-1	0-2	1
MTH 174	Calculus with Analytic Geometry II	5	0	5
___ ___ <sup>2</sup>	Humanities/Fine Arts Elective	3	0	3
<b>TOTAL</b>		15-17	2-4	17-18
PHY 241	University Physics I	3	3	4
EGR ___ <sup>4</sup>	Engineering Elective	3	0-3	3-4
MTH 277	Vector Calculus	4	0	4
EGR 206 or EGR ___ <sup>4</sup>	Engineering Economy or Engineering Elective	3	0	3
___ ___ <sup>2</sup>	Social/Behavioral Science Elective	3	0	3
<b>TOTAL</b>		16	3-6	17-18
EGR ___ <sup>4</sup>	Engineering Elective	3	0-3	3-4
___ ___ <sup>2</sup>	Humanities/Fine Arts Elective	3	0	3
___ ___ <sup>2</sup>	Social/Behavioral Science Elective	3	0	3
PHY 242	University Physics II	3	3	4
MTH 279	Ordinary Differential Equations	4	0	4

<b>TOTAL</b>	16	3-6	17-18
<b>Total Minimum Credits for AS Degree in Engineering</b>			<b>68</b>
<p><sup>1</sup>CHM 112 is required at Virginia Tech; students should check CHM requirements at other transfer institutions.</p> <p><sup>2</sup>A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design..</p> <p><sup>3</sup>EGR 123 is required for VCU, and EGR 110 is required for Virginia Tech. Students should consult their engineering program advisor for assistance with selecting the appropriate course for other institutions.</p> <p><sup>4</sup>Engineering electives are EGR 110, EGR 123, EGR 245, EGR 246, EGR 251, EGR 255, EGR 261, and CSC 210.</p> <p><b>Notes:</b> 1) Virginia Tech requires a two-credit linear algebra course. That requirement can be satisfied by completing MTH 285 at JSRCC. 2) Students should consult with their Engineering advisor at the earliest possible date to acquaint themselves with the requirements of the Engineering program at the college or university to which transfer is planned.</p>			