

STATE BOARD OF COMMUNITY COLLEGES

Curriculum Standard Revision Approved by the System President

Information: The System President has approved the curriculum standard revision listed below:

Associate in Engineering (A10500)

Revision:

- Add GEL 111 Geology, CHM 251 Organic Chemistry I and CHM 252 Organic Chemistry II
- Insert “Other General Education (3-4 SHC)” to clarify the additional general education options
- Re-define list of “Pre-major Elective Hours (11-12 SHC) including the addition of new courses.

A.E. students pursuing a 4-year chemical engineering degree need CHM 251 and CHM 252. A.E. students pursuing a 4-year civil engineering degree need GEL 111 Geology. Selecting these courses from the AE list of pre-major electives will position the student to improve the pathway to transfer as seamlessly as possible to the receiving university thus reducing cost and time at the 4-year institution.

Background: 1D SBCCC 400.9 (b) states:

A revision of an existing curriculum standard shall:

- (1) Have written concurrence by two-thirds of colleges approved to offer the curriculum program; and*
- (2) Be in alignment with criteria outlined in 1D SBCCC 400.10(e).*
- (3) The President of the North Carolina Community College System shall have the authority to approve or deny the revision of an existing curriculum standard. If only two colleges are approved to offer the curriculum, and written concurrence is not obtained from both colleges, the State Board of Community Colleges shall have the authority to approve or deny the revision to the existing curriculum standard.*

Contact(s):

Dr. Lisa Eads
Director

Associate in Engineering (A10500) Curriculum

The Associate in Engineering (AE) degree shall be granted for a planned program of study consisting of a minimum of 60 semester hours of credit (SHC) of courses. Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic computer use. The degree plan includes required general education and prerequisite courses that are acceptable to all state funded Bachelor of Engineering programs. Students who follow the degree progression plan will meet the entrance requirements at all of the North Carolina public Bachelor of Science Engineering programs. Associate in Engineering graduates may then apply to any of these programs without taking additional and sometimes duplicative courses. *Admission to Engineering programs is highly competitive and admission is not guaranteed.*

To be eligible for the transfer of credits under the AE to the Bachelor of Science in Engineering Articulation Agreement, community college graduates must obtain a grade of "C" or better in each course and an overall GPA of at least 2.5 on a 4.0 scale.

GENERAL EDUCATION (45-46 SHC) The general education common course pathway includes study in the areas of English composition; humanities and fine arts; social and behavioral sciences; natural sciences and mathematics.

UNIVERSAL GENERAL EDUCATION TRANSFER COMPONENT

*(Universal General Education Transfer Component (UGETC) courses will transfer for equivalency credit to all UNC institutions.) *Exceptions (i.e. courses which are not classified as UGETC) are italicized.*

English Composition (6 SHC) The following two English composition courses are required:

ENG	111	Writing and Inquiry	(3 SHC)
ENG	112	Writing/Research in the Disciplines	(3 SHC)

Humanities/Fine Arts and Communication: Select one course from each category (6 SHC)

Humanities: Choose One:

ENG	231	American Literature I	(3 SHC)
ENG	232	American Literature II	(3 SHC)
ENG	241	British Literature I	(3 SHC)
ENG	242	British Literature II	(3 SHC)
PHI	215	Philosophical Issues	(3 SHC)
PHI	240	Introduction to Ethics	(3 SHC)
REL	110	<i>World Religions</i>	<i>(3 SHC)*</i>

(REL 110 will transfer for equivalency credit to the engineering programs at all five UNC institutions that offer undergraduate engineering programs. It may not transfer with equivalency to other programs.)

Fine Arts and Communication: Choose One:

COM	231	Public Speaking	(3 SHC)
ART	111	Art Appreciation	(3 SHC)
ART	114	Art History Survey I	(3 SHC)
ART	115	Art History Survey II	(3 SHC)
MUS	110	Music Appreciation	(3 SHC)
MUS	112	Introduction to Jazz	(3 SHC)

Social/Behavioral Sciences: One course required. Select second course. (6 SHC)

Required:

ECO	251	Principles of Microeconomics	(3 SHC)
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Choose One:

HIS	111	World Civilizations I	(3 SHC)
HIS	112	World Civilizations II	(3 SHC)
HIS	131	American History I	(3 SHC)
HIS	132	American History II	(3 SHC)
POL	120	American Government	(3 SHC)
PSY	150	General Psychology	(3 SHC)
SOC	210	Introduction to Sociology	(3 SHC)

Mathematics (12 SHC) *Calculus I is the lowest level math course that will be accepted by the engineering programs for transfer as a math credit. Students who are not calculus-ready will need to take additional math courses.*

MAT	271	Calculus I	(4 SHC)
MAT	272	Calculus II	(4 SHC)
MAT	273	Calculus III	(4 SHC)*

Natural Sciences (12 SHC)

CHM	151	General Chemistry I	(4 SHC)
PHY	251	General Physics I	(4 SHC)
PHY	252	General Physics II	(4 SHC)

Other General Education (3-4 SHC)

BIO	111	General Biology I	(4 SHC)
CHM	152	General Chemistry II	(4 SHC)
COM	110	Introduction to Communication	(3 SHC)
COM	231	Public Speaking	(3 SHC)
ECO	252	Principles of Macroeconomics	(3 SHC)
GEL	111	Geology	(4 SHC)
HUM	110	Technology and Society	(3 SHC)
PHI	240	Intro to Ethics	(3 SHC)

Total General Education Hours Required: 45-46 SHC

OTHER REQUIRED HOURS (18 SHC)**Academic Transition (1 SHC)**

ACA	122	College Transfer Success	(1 SHC)
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Students must complete ACA 122 within the first 30 hours of enrollment.

Pre-major Elective (2 SHC)

EGR	150	Introduction to Engineering	(2 SHC)
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Other General Education and Pre-major Elective Hours: (11-12 SHC)

Select 11-12 SHC of courses from the following courses classified as pre-major, elective, or general education courses within the Comprehensive Articulation Agreement. *(Students must meet the receiving university's foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.)*

Students should choose courses appropriate to the specific university and engineering major requirements.

BIO	111	General Biology I	(4 SHC)
CHM	152	General Chemistry II	(4 SHC)
CHM	251	Organic Chemistry I	(4 SHC)
CHM	252	Organic Chemistry II	(4 SHC)
COM	110	Introduction to Communication	(3 SHC)
COM	231	Public Speaking	(3 SHC)
CSC	134	C++ Programming	(3 SHC)
CSC	151	JAVA Programming	(3 SHC)

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DFT	170	Engineering Graphics	(3 SHC)
ECO	252	Principles of Macroeconomics	(3 SHC)
EGR	210	Intro to Electrical/Computer Engineering Lab	(2 SHC)
EGR	212	Logic System Design I	(3 SHC)
EGR	214	Num Methods for Engineers	(3 SHC)
EGR	215	Network Theory I	(3 SHC)
EGR	216	Logic and Network Lab	(1 SHC)
EGR	220	Engineering Statics	(3 SHC)
EGR	225	Engineering Dynamics	(3 SHC)
EGR	228	Introduction to Solid Mechanics	(3 SHC)
GEL	111	Geology	(4 SHC)
HUM	110	Technology and Society	(3 SHC)
MAT	280	Linear Algebra	(3 SHC)
MAT	285	Differential Equations	(3 SHC)
PED	110	Fitness and Wellness for Life	(2 SHC)

****One semester hour of credit may be included in a 61 SHC associate in engineering program of study. The transfer of this hour is not guaranteed.**

Total Semester Hours Credit (SHC) in Program: 60-61**

Students must meet the receiving university's foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

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