

STATE BOARD OF COMMUNITY COLLEGES
ASSOCIATE IN ENGINEERING (A10500) Program Applications

Associate in Engineering program applications must include the following items in order to be placed on the Associate in Engineering program approval request presented to the State Board of Community Colleges as part of the consent agenda:

1. Letter of request from the President of the College indicating the proposed effective term.
2. Copy of the proposed program of study which is compliance with the AE curriculum standard.
3. Copy of the minutes from the Board of Trustees meeting(s) where the proposed program was discussed and approved.
4. Certification of the following which is signed by the college President and Board of Trustees chair:
 - a. *The program will enhance the workforce of North Carolina, and will provide educational and training opportunities consistent with the mission of the college.*
 - b. *The college has assessed the need for the program and the facilities and resources required to maintain a viable program and certifies that the college can operate this program efficiently and effectively within the facilities and resources available to the college.*
 - c. *The college has evidence of sufficient student demand to offer the program and will provide master's credentialed faculty for each course provided under the Associate in Engineering degree.*

The State Board of Community Colleges is asked to approve the curriculum programs at the listed colleges, which have met the criteria above, with an effective term of Fall 2015:

Associate in Engineering (A10500)
Blue Ridge Community College
Brunswick Community College
Catawba Valley Community College
Forsyth Technical Community College
Gaston College

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Associate in Engineering (A10500) Curriculum *Effective Term: Fall 2015*

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 (42 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:

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|---------|-------------------------------------|---------|
| 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) |
| PHI 215 | Philosophical Issues | (3 SHC) |
| PHI 240 | Introduction to Ethics | (3 SHC) |
| <i>REL 110</i> | <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:

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| 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) |
|---------|------------------------------|---------|

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.*

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

Natural Sciences (12 SHC)

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

Total General Education Hours Required: 42 SHC

OTHER REQUIRED HOURS (18 SHC)

Academic Transition (1 SHC)

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| 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)

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| EGR 150 Introduction to Engineering | (2 SHC) |
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Other General Education and Pre-major Elective Hours: (15 SHC)

Select 15 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) |
| COM 110 | Introduction to Communication | (3 SHC) |
| CSC 134 | C++ Programming | (3 SHC) |
| CSC 151 | JAVA Programming | (3 SHC) |
| 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 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) |
| 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 arts 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.

SBCC Approved 02/20/2015; BOG approved 02/27/2015.