

## Associate in Engineering (A10500) (College Transfer Curricula)

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.

### COURSE REQUIREMENTS

Richmond Community College provides day and evening course sequences for selected programs to enable students to better plan what courses to take to reach their educational goals. However, given the continued increase in the use of technology in instruction and increasing student demand for distance learning courses, the College may offer hybrid, online, web-based and information highway courses in place of traditional courses in any course sequence that is listed. Therefore, students should be aware of this possibility and prepare themselves to successfully function in a hybrid, online, web-based, or information highway course.

	Class	Lab	Work/ Clinical	Credit
<b>A. General Education Courses</b>				
1. English Composition (6 SHC)				
ENG 111 Writing and Inquiry	3	0	0	3
ENG 112 Writing/Research in the Disciplines	3	0	0	3
2. Humanities (3 SHC)				
<i>Select one course from the following:</i>				
ENG 231 American Literature I	3	0	0	3
ENG 232 American Literature II	3	0	0	3
PHI 240 Introduction to Ethics	3	0	0	3
REL 110 World Religions	3	0	0	3
3. Fine Arts and Communication (3 SHC)				
<i>Select one course from the following:</i>				
ART 111 Art Appreciation	3	0	0	3
COM 231 American Literature I	3	0	0	3
MUS 110 Music Appreciation	3	0	0	3
4. Social/Behavioral Sciences (6 SHC)				
Required				
ECO 251 Principles of Microeconomics	3	0	0	3

Select one course from the following:

HIS	111	World Civilizations I	3	0	0	3
HIS	112	World Civilizations II	3	0	0	3
HIS	131	American History I	3	0	0	3
HIS	132	American History II	3	0	0	3
POL	120	American Government	3	0	0	3
PSY	150	General Psychology	3	0	0	3
SOC	210	Introduction to Sociology	3	0	0	3
5. Mathematics (12 SHC)						
MAT	271	Calculus I	3	2	0	4
MAT	272	Calculus II	3	2	0	4
MAT	273	Calculus III	3	2	0	4
6. Natural Sciences (12 SHC)						
CHM	151	General Chemistry I	3	3	0	4
PHY	251	General Physics I	3	3	0	4
PHY	252	General Physics II	3	3	0	4
<b>B. Other Required Courses</b>						
1. Academic Transition (1 SHC)						
ACA	122	College Transfer Success	0	2	0	1
2. Pre-major Elective (2 SHC)						
EGR	150	Introduction to Engineering	1	2	0	2
Other General Education and Pre-Major Elective Hours (16 SHC)						
BIO	111	General Biology I	3	3	0	4
CHM	152	General Chemistry II	3	3	0	4
COM	110	Introduction to Communication	3	0	0	3
ECO	252	Principles of Macroeconomics	3	0	0	3
PED	110	Fitness and Wellness for Life	1	2	0	2

**Total Credit Hours**

**61**

\*Approved Electives are listed on the page before the Course Descriptions.

### SEMESTER SCHEDULE ENGINEERING (DAY)

			Work/			
			Class	Lab	Clinical	Credit
<b>First Year – Fall Semester</b>						
ACA	122	College Transfer Success	0	2	0	1
CHM	151	General Chemistry I	3	3	0	4
ENG	111	Writing and Inquiry	3	0	0	3
MAT	271	Calculus I	3	2	0	4
		Humanities	3	0	0	3
			<u>12</u>	<u>7</u>	<u>0</u>	<u>15</u>

<b>First Year – Spring Semester</b>							
BIO	111	General Biology I	3	3	0	4	
CHM	152	General Chemistry II	3	3	0	4	
ENG	112	Writing/Research in the Disciplines	3	0	0	3	
MAT	272	Calculus II	3	2	0	4	
			<u>12</u>	<u>8</u>	<u>0</u>	<u>15</u>	
<b>Second Year – Fall Semester</b>							
ECO	251	Principles of Microeconomics	3	0	0	3	
EGR	150	Introduction to Engineering	1	2	0	2	
MAT	273	Calculus III	3	2	0	4	
PED	110	Fitness and Wellness for Life	1	2	0	2	
PHY	251	General Physics I	3	3	0	4	
			<u>11</u>	<u>9</u>	<u>0</u>	<u>15</u>	
<b>Second Year – Spring Semester</b>							
COM	110	Introduction to Communications	3	0	0	3	
ECO	252	Principles of Macroeconomics	3	0	0	3	
PHY	252	General Physics II	3	3	0	4	
		Fine Arts/Communication	3	0	0	3	
		Social/Behavioral Sciences	3	0	0	3	
			<u>15</u>	<u>3</u>	<u>0</u>	<u>16</u>	
<b>Total Credit Hours</b>					<b>61</b>		

Program Completion Guide  
**ASSOCIATE IN ENGINEERING (A10500)**

Student Name: \_\_\_\_\_ ID #: \_\_\_\_\_ Date of Enrollment: \_\_\_\_\_

**Section I: Developmental Courses (if needed)**

Courses	Scores	Cr.	Prerequisites/ Corequisites	Grade	Notes/Semester
DMA 010 Operations with Integers	<7 on DAP	1	Pre: None		
DMA 020 Fractions and Decimals	<7 on DAP	1	Pre: DMA 010		
DMA 030 Propor/Ratio/Rate/Percent	<7 on DAP	1	Pre: DMA 010-020		
DMA 040 Express/Lin Equat/Inequal	<7 on DAP	1	Pre: DMA 010-030 or MAT 060		
DMA 050 Graphs/Equations of Lines	<7 on DAP	1	Pre: DMA 010-040 or DMA 040 and MAT 060		
DMA 060 Polynomial/Quadratic Appl (Required if taking MAT 171)	<7 on DAP	1	Pre: DMA 010-050 or MAT 060 and MAT 070		
DMA 070 Rational Express/Equation (Required if taking MAT 171)		1	Pre: DMA 010-060 or MAT 060 and MAT 070		
DMA 080 Radical Express/Equations (Required if taking MAT 171)		1	Pre: DMA 010-070 or MAT 060 and MAT 070		
DRE 096 Integrated Reading and Writing	104-116	3	Pre: None		
DRE 097 Integrated Reading Writing II	117-135	3	Pre: DRE 096		
DRE 098 Integrated Reading Writing III	136-150	3	Pre: DRE 097		

**Section II:**
**A. College Orientation and Academic Transition (1 credit)**

Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
ACA 122 College Transfer Success	ACA 122	1		

**B. Universal General Education Transfer Component (42 credits)\***
**English Composition (6 credits)\*\***

Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
ENG 111 Writing and Inquiry	ENG 111	3		
ENG 112 Writing/Research in the Disciplines	ENG 112	3		

**Communications and Humanities/Fine Arts (6 credits)**

Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
<b>Humanities (3 credits)**</b>				
Select one (1) course from the following: <b>ENG 231, ENG 232, PHI 215, PHI 240, REL 110***</b> (Courses in Bold are offered at RCC.)		3		
<b>Fine Arts and Communications (3 credits)**</b>				
Select one (1) course from the following: <b>ART 111, ART 114, ART 115, COM 231, MUS 110, MUS 112</b> (Courses in Bold are offered at RCC.)		3		

**Social/Behavioral Sciences (6 credits)\*\***

Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
Take ECO 251 and select one (1) additional course from the following: HIS 111, HIS 112, HIS 131, HIS 132 POL 120, PSY 150, SOC 210	ECO 251	3		
		3		

**Mathematics (12 credits)\*\***

Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
---------	--------	--------	-------------------------	----------------------

MAT 271 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	4		
	MAT 272	4		
	MAT 273	4		

Natural Sciences (12 credits)**				
Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
Take CHM 151, PHY 251, and PHY 252	CHM 151	4		
	PHY 251	4		
	PHY 252	4		

**C. Other Required Hours (17 credits)\***

Pre-major and/or Other General Education Courses (17 credits)**				
Courses	Course	Credit	Sem. Registered/Planned	Sem. Completed/Grade
Take EGR 150 and select 15 SHC of courses from the following courses classified as pre-major, elective, or general education courses within the CAA. (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. <b>BIO 111, CHM 152, COM 110, CSC 134, CSC 151, DFT 170, ECO 252, EGR 210, EGR 212, EGR 215, EGR 216, EGR 220, EGR 225, EGR 228, HUM 110, MAT 280, MAT 285, PED 110</b> (Courses in Bold are offered at RCC.)	EGR 150	2		

**NOTES:** \*All courses must be completed with a grade of "C" or better.

\*\*See course catalog for prerequisite and/or corequisite requirements.

\*\*\*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.

**Students please read the following and sign below.**

I understand that as an RCC student, I am ultimately responsible for my schedule. I understand that I must complete each course with a grade of "C" or better and follow the established course sequence or my ability to graduate on time may be affected.

My advisor has information regarding other colleges and transfer opportunities that I can investigate after completing my degree/diploma/certificate, and I understand that if I would like more information I can schedule an appointment with him/her.

Student Name: \_\_\_\_\_ Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Name: \_\_\_\_\_ Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Name: \_\_\_\_\_ Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Name: \_\_\_\_\_ Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Name: \_\_\_\_\_ Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Name: \_\_\_\_\_ Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Name: \_\_\_\_\_ Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Name: \_\_\_\_\_ Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_