

College Transfer Programs

A 10 40 OAE Associate in Science - Pre Engineering

Students who have not met the prerequisite requirements to enroll in MAT 271 Calculus I, will need to enroll in the Associate in Science in Pre-Engineering program. Once a student meets the prerequisite requirements for MAT 271, they can change their program of study to the Associate in Engineering (A10500).

CONCENTRATION OVERVIEW

The Associate in Science Degree is designed to meet the two-year general college requirement of four-year colleges and universities. The curriculum has a heavy concentration in mathematics and science areas to allow College of The Albemarle students, after two years of study, to transfer with junior-level status. This curriculum is suited to students who want to pursue a four-year degree in areas of study such as computer science, engineering, mathematics, the sciences or professional programs that require strong mathematics and science backgrounds.

Upon completion of this concentration, graduates will be able to analyze and solve quantitative problems, reason logically from hypothesis to conclusion, apply mathematics techniques in scientific problem solving, and use laboratory technology, equipment, and techniques critically and safely to investigate scientific problems using proper scientific methods.



Student Learning Outcomes – Upon completion of the program, students will:

1. Prepare a deliverable designed to increase knowledge, foster understanding, or promote change in audiences' attitudes, values, beliefs, or behavior.
2. Apply appropriate strategies to identify materials, evaluate information, and reference relevant discipline materials to effectively address a topic.
3. Use mathematical skills to logically analyze and interpret mathematics in context.
4. Develop meaningful questions, gather and analyze evidence, and create evidence-based conclusions or solutions.

In compliance with state transfer articulation agreements, only courses with a grade of C or higher will fulfill degree requirements in this program.

Partnership: College of The Albemarle has articulation agreements with certain universities for students transferring into specific programs of study. Students can complete the first two years of that specific baccalaureate degree at College of The Albemarle. Students should check with their advisor and the COA website for more information. www.albemarle.edu/student-resources/transfer-from-coa/

COA students who earn an Associate of Science degree and follow the designated degree plans can transition seamlessly into the Bachelor of Science in Biology and Biblical Studies degree or the Bachelor of Science in Science Education degree at Mid-Atlantic Christian University.

*This program offers a [Career and College Promise pathway \(CCP\) P1042C](#). Courses within the pathway are highlighted in yellow.

A 10 400AE Associate in Science Pre-Engineering – First Year

COURSE NUMBER	COURSE TITLE	SEMESTER	CO-REQUISITES	PRE-REQUISITES	CREDITS
STUDENT SUCCESS					1
ACA 122	College Transfer Success			None	1
COMPOSITION					6
ENG 111	Writing & Inquiry		ENG 011	ENG 002 Tier 1	3
ENG 112	Writing/Research in the Disciplines			ENG 111	3
MATHEMATICS					8-9
Select 2 courses from: MAT 171 (MAT 003 Tier 2 or MAT 143 or MAT 152), MAT 172 (MAT 171 with a grade of C or higher), MAT 175 (MAT 003 Tier 3), MAT 263 (MAT 171 with a grade of C or higher), MAT 271 (MAT 172 with a grade of C or higher), or MAT 272 (MAT 271 with a grade of C or higher). Note: Students cannot receive credit for both MAT 263 and MAT 271. Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.					
Recommendation for AE Students: MAT 171, MAT 172, MAT 175, MAT 271, or MAT 272.					
			Varies	Varies – pre-requisites in parentheses	4-5
			Varies	Varies – pre-requisites in parentheses	4
NATURAL SCIENCES					8
Select a two-course sequence from: BIO 111-112 (ENG 002 Tier 1 and MAT 003 Tier 1), CHM 151-152 (ENG 002 Tier 1 and MAT 003 Tier 2, and either CHM 090 or one unit of HS Chemistry), PHY 151-152 (MAT 171 or MAT 271), or PHY 251-252 (MAT 271 and co-requisite MAT 272).					
Recommendation for AE Students: PHY 251 & PHY 252 or CHM 151 & CHM 152					
			Varies	Varies – pre-requisites in parentheses	4
			Varies	Varies – pre-requisites in parentheses	4
SOCIAL/BEHAVIORAL SCIENCES					6
Select 2 courses from different disciplines: ECO 251 (ENG 002 Tier 1 and MAT 003 Tier 1), ECO 252 (ENG 002 Tier 1 and MAT 003 Tier 1), HIS 111 (ENG 002 Tier 1), HIS 112 (ENG 002 Tier 1), HIS 131 (ENG 002 Tier 1), HIS 132 (ENG 002 Tier 1), POL 120 (ENG 002 Tier 1), PSY 150 (ENG 002 Tier 1), or SOC 210 (ENG 002 Tier 1).					
Recommendation for AE Students: ECO 251 and choice of HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210.					
				Varies – pre-requisites in parentheses	3
				Varies – pre-requisites in parentheses	3
HEALTH/ WELLNESS					2-3
Select 2-3 credit hours from: HEA 110 – 3 credit hours (ENG 002 Tier 1), PED 110 – 2 credit hours (none), or two 1-credit-hour PED activity courses (Level 1 and Beginning activity courses have no pre-requisites; Level 2 and Intermediate activity courses have a pre-requisite of the corresponding Level 1 or Beginning activity courses).					
Recommendation for AE Students: PED 110					
				Varies – pre-requisites in parentheses	2-3
TOTAL SEMESTER HOURS REQUIRED FOR ASSOCIATE DEGREE – FIRST YEAR					31-32

10 400AE Associate in Science Pre-Engineering – Second Year

COURSE NUMBER	COURSE TITLE	SEMESTER	CO-REQUISITES	PRE-REQUISITES	CREDITS
MATHEMATICS/NATURAL SCIENCES					8
<p>Select 2 courses from: MAT 172 (MAT 171 with a grade of C or higher), MAT 263 (MAT 171 with a grade of C or higher), MAT 271 (MAT 172 with a grade of C or higher), MAT 272 (MAT 271 with a grade of C or higher), MAT 273 (MAT 272 with a grade of C or higher), BIO 111 (ENG 002 Tier 1 and MAT 003 Tier 1), BIO 112 (BIO 111), CHM 151 (ENG 002 Tier 1 and MAT 003 Tier 2, and either CHM 090 or one unit of HS Chemistry), CHM 152 (CHM 151), PHY 151 (MAT 171 or MAT 271), PHY 152 (PHY 151), PHY 251 (MAT 271 and co-requisite MAT 272), or PHY 252 (MAT 272 and PHY 251).</p> <p>NOTE: Students cannot receive credit for MAT 263 if they have taken MAT 271-272. Students can only receive credit for one PHY sequence in this degree. Student cannot receive credit for MAT 175 if they have credit for MAT 171-172. Recommendation for AE Students: MAT 271*, MAT 272*, MAT 273*, CHM 151*, CHM 152, PHY 251*, or PHY 252*. *HIGHLY ENCOURAGED.</p>					
			Varies	Varies – pre-requisites in parentheses	4
			Varies	Varies – pre-requisites in parentheses	4
HUMANITIES/FINE ARTS					3
<p>Select 1 course from: ART 111 (none), ART 114 (ENG 002 Tier 1), ART 115 (ENG 002 Tier 1), DRA 111 (none), ENG 231 (ENG 112), ENG 232 (ENG 112), ENG 241 (ENG 112), ENG 242 (ENG 112), MUS 110 (none), MUS 112 (none), or PHI 240 (ENG 111). Recommendation for AE Students: ENG 231, ENG 232, ENG 241, ENG 242 or PHI 240</p>					
				Varies – pre-requisites in parentheses	3
COMMUNICATIONS					3
COM 231	Public Speaking			ENG 111	3
OTHER GENERAL EDUCATION HOURS					2-3
<p>Select 2-3 additional credit hours from the College of The Albemarle (COA) list of Comprehensive Articulation Agreement (CAA) courses, coded either as Universal General Education Transfer Course (UGETC) or as General Education (GEN ED). Recommendations for AE Students: BIO 111, CHM 152, COM 110, ECO 252, or PHI 240</p>					
				Varies	2-3
ADDITIONAL COURSEWORK					11-12
<p>Select 11-12 additional credit hours from the College of The Albemarle list of Comprehensive Articulation Agreement (CAA) courses. Recommendations for AE Students: EGR 150*, DFT 170*, CHM 152, MAT 271*, MAT 272*, MAT 273*, MAT 280, BIO 111, COM 110, CSC 151, or ECO 252. *HIGHLY ENCOURAGED.</p>					
				Varies	11-12
				Varies	Varies
				Varies	Varies
				Varies	Varies
				Varies	Varies
TOTAL SEMESTER HOURS REQUIRED FOR ASSOCIATE DEGREE					60-61*

* The total number of elective hours needed is based upon course choices made in the Mathematics/Natural Sciences and Health/Wellness areas. A student must have 60-61 credit hours to complete this degree.

A 10 400AE Associate in Science Pre-Engineering

Suggested Sequence of Courses

First Year Fall Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
ACA 122 College Transfer Success	Pre-Requisites: None	0	2	0	2	1
ENG 111 Writing and Inquiry	Pre-Requisites: ENG 002 Tier 1 Co-Requisites: ENG 011	3	0	0	3	3
Mathematics Recommendation: MAT 171	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
Natural Science Recommendation: CHM 151	Pre-Requisites: Varies Co-Requisites: Varies	3	2-3	0	5-6	4
Social /Behavioral Science Recommendation to select one from the following: HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210	Pre-Requisites: Varies	3	0	0	3	3
TOTAL SEMESTER HOURS		12	6-7	0	18-19	15
First Year Spring Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
ENG 112 Writing/Research in Disciplines	Pre-Requisites: ENG 111	3	0	0	3	3
Mathematics Recommendation: MAT 172	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
CAA Elective Recommendation: EGR 150	Pre-Requisites: None	1	2	0	3	2
Natural Science Recommendation: CHM 152	Pre-Requisites: Varies Co-Requisites: Varies	3	3	0	6	4
COM 231: Public Speaking	Pre-Requisites: ENG 111	3	0	0	3	3
TOTAL SEMESTER HOURS		13	7	0	20	16

Recommend moving to Associate in Engineering (A10500) after Year 1 and the completion of MAT 171 & MAT 172 or MAT 175.

Second Year Fall Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
Mathematics/ Natural Science Recommendation: MAT 271	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
Humanities/Fine Arts Recommendation to select one from the following: ENG 231, ENG 232, ENG 241, ENG 242 or PHI 240	Pre-Requisites: Varies	3	0	0	3	3
Social /Behavioral Science Recommendation: ECO 251	Pre-Requisites: Varies	3	0	0	3	3
General Education Elective Recommendation to select one from the following: BIO 111, COM 110, ECO 252, or PHI 240	Pre-Requisites: Varies	3	Varies	0	3-4	3-4
(CAA) Elective(s) Recommendation: DFT 170	Pre-Requisites: Varies	2	2	0	4	3
TOTAL SEMESTER HOURS		14	Varies	0	18-19	16-17
Second Year Spring Semester Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
Mathematics/ Natural Science Recommendation: PHY 251	Pre-Requisites: Varies Co-Requisites: Varies	3	3	0	6	4
(CAA) Elective(s) Recommendation: MAT 272	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
Health/Wellness Recommendation: PED 110	Pre-Requisites: Varies	1	2	0	3	2
(CAA) Elective(s) Recommendation to select one from the following: MAT 280, BIO 111, COM 110, CSC 151, or ECO 252	Pre-Requisites: Varies	Varies	Varies	0	3-4	3-4
(CAA) Elective(s) Recommendation to select one from the following: MAT 280, BIO 111, COM 110, CSC 151, or ECO 252	Pre-Requisites: Varies	Varies	Varies	0	3-4	3-4
TOTAL SEMESTER HOURS		Varies	Varies	0	20-22	16-18
TOTAL SEMESTER HOURS REQUIRED FOR ASSOCIATE DEGREE						60-61*

Associate in Science Pre-Engineering (Part-Time)

Term 1 Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
ENG 111: Writing and Inquiry	Pre-Requisites: ENG 002 Tier 1 Co-Requisites: ENG 011	3	0	0	3	3
ACA 122: College Transfer Success	Pre-Requisites: None Co-Requisites: None	0	2	0	2	1
Choose 1 Mathematics Course: MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation: MAT 171	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
TOTAL SEMESTER HOURS		6	4	0	10	8

Term 2 Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
ENG 112 Writing/Research in Disciplines	Pre-Requisites: ENG 111 Co-Requisites: None	3	0	0	3	3
Choose 1 Mathematics Course: MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation: MAT 172	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
TOTAL SEMESTER HOURS		6	2	0	8	7

Term 3 Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
Choose 1 Humanities/Fine Arts Course: ART 111, ART 114, ART 115, DRA 111, ENG 231, ENG 232, ENG 241, ENG 242, MUS 110, MUS 112, or PHI 240 Recommendation to select one from the following: ENG 231, ENG 232, ENG 241, ENG 242 or PHI 240	Pre-Requisites: Varies	3	0	0	3	3
Choose 1 Social/Behavioral Science Course: ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation: ECO 251	Pre-Requisites: Varies	3	0	0	3	3
TOTAL SEMESTER HOURS		6	0	0	6	6

Term 4 (Fall) Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
CAA Elective(s)*** Recommendation: MAT 271	Pre-Requisites: Varies	3	2	0	5	4
Choose 1 Math/Science: MAT 172, MAT 263, MAT 271, MAT 272, MAT 273, BIO 111, BIO 112, CHM 151, CHM 152, PHY 151, PHY 152, PHY 251, or PHY 252. Recommendation: CHM 151	Pre-Requisites: Varies Co-Requisites: Varies	3	3	0	6	4
TOTAL SEMESTER HOURS		6	5	0	11	8

Term 5 (Spring) Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
Choose 1 Math/Science Course: MAT 172, MAT 263, MAT 271, MAT 272, MAT 273, BIO 111, BIO 112, CHM 151, CHM 152, PHY 151, PHY 152, PHY 251, or PHY 252. Recommendation: MAT 272	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
Begin 1 Natural Science Sequence: BIO 111-112, CHM 151-152, PHY 151-152 or PHY 251-252 Recommendation: PHY 251	Pre-Requisites: Varies Co-Requisites: Varies	3	3	0	6	4
TOTAL SEMESTER HOURS		6	5	0	11	8

Term 6 Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
COM 231: Public Speaking	Pre-Requisites: ENG 111 Co-Requisites: None	3	0	0	3	3
Physical Education/Health: HEA 110, PED 110, or two 1-credit-hour PED courses Recommendation: PED 110	Pre-Requisites: Varies	1	2	0	3	2
TOTAL SEMESTER HOURS		4	2	0	6	5

Term 7 (Fall) Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
Finish 1 Natural Science Sequence: BIO 111-112, CHM 151-152, PHY 151-152 or PHY 251-252 Recommendation: PHY 252	Pre-Requisites: Varies Co-Requisites: Varies	3	3	0	4	4
CAA Elective(s)*** Recommendation: MAT 273	Pre-Requisites: Varies Co-Requisites: Varies	3	2	0	5	4
TOTAL SEMESTER HOURS		5	5	0	9	8

Term 8 (Spring) Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
CAA Elective(s)*** Recommendation to select one from the following: BIO 111, CHM 152, COM 110, CSC 151, DFT 170, ECO 252, or MAT 280	Pre-Requisites: Varies Co-Requisites: Varies	Varies	Varies	0	Varies	Varies
CAA Elective(s)*** Recommendation: EGR 150	Pre-Requisites: Varies Co-Requisites: Varies	1	2	0	3	2
TOTAL SEMESTER HOURS		Varies	Varies	0	Varies	Varies

Term 9 Course Number and Title	Pre-Requisites and Co-Requisites	Class Hours	Lab Hours	Clinical Hours	Total Contact Hours	Total Credit Hours
General Education Elective(s)*** Recommendation to select one from the following: BIO 111, CHM 152, COM 110, ECO 252, or PHI 240	Pre-Requisites: Varies Co-Requisites: Varies	Varies	Varies	0	Varies	Varies
Choose 1 Social/Behavioral Science Course: ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation to select one from the following: HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, SOC 210	Pre-Requisites: Varies	3	0	0	3	3
TOTAL SEMESTER HOURS		Varies	Varies	0	Varies	Varies

***Number of hours of CAA elective and general education elective coursework needed is based upon course choices made in the first-year mathematics course, in other general education hours, and in the health/wellness choice. Courses should be chosen based upon requirements for student's intended major at the receiving four-year institution. A student must have 60-61 credit hours to complete the degree.