

Associate in Science Pathway (P1042C) Course Sequencing for Pre- Engineering

Goal: Complete an Associate in Science Pathway in 2 Years; 3rd-year option to complete Associate in Science Degree at COA; Also complete as many core engineering requirements.

AS Graduates will be able to transfer with junior-level status in almost any academic or pre professional field ranging from traditional academic areas such as computer science, engineering, mathematics, the sciences or professional programs that require strong mathematics and science backgrounds.

The [Comprehensive Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the University of North Carolina (UNC) System is intended to provide smooth transfer for community college students who wish to continue their education at constituent institutions of the University of North Carolina System. The [Independent Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the Signatory Institutions of North Carolina Independent Colleges and Universities (NCICU) is intended to provide smooth transfer for community college students who wish to continue their education at an NCICU Signatory Institution.

*AS Pathway Note: OPTIONAL GENERAL EDUCATION HOURS (0-8 SHC) A student may take up to 8 SHC of foreign language courses and accompanying labs, in a single language, designated as General Education in the CAA as a part of this pathway. These courses are not a part of the Universal General Education Transfer Component. Students who complete these courses with a grade of "C" or better will receive transfer credit. The receiving university will determine whether the courses will count as general education, pre-major, or elective credit.

**High school students in the CCP College Transfer Pathway leading to the Associate in Science must complete the entire pathway before taking additional courses in the Associate in Science degree with the exception of mathematics courses beyond MAT 271.

Note: General Education electives should be selected from courses classified as general education within the [Comprehensive Articulation Agreement \(CAA\)](#). Students should select these courses based on their intended major and transfer university. 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 consult with the transfer guides available at <https://www.cfnc.org/plan-your-future/plan-for-college/transfer-student-planner/to-unc-system-institutions/>.

Semester	Course	Cr Hrs	Co Hrs	Course Designation	Course Notes	Dual Credit Notes
Fall	ACA 122 - College Transfer Success	1	2	Required Course	Pathway Course	
	ENG 111 - Writing & Inquiry	3	3	Required Course - UGETC: English Comp	Pathway Course	ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Natural Science Sequence	4	5-6	Choice of Natural Science - BIO 111/BIO 112, CHM 151/CHM 152, PHY 110/110A, PHY 151/PHY 152, or PHY 251/PHY 252 Recommendation for AE Students: CHM 151	Pathway Course	1 Elective Credit CHM 151 + CHM 152 = Physical Science Requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement PHY 151 + PHY 152 = Physical Science Requirement PHY 251 + PHY 252 = Physical Science Requirement
	Total	8	10-11			
Spring	ENG 112 - Writing/Research in the Disciplines	3	3	Required Course - UGETC: English Comp	Pathway Course	ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Natural Science Sequence	4	5-6	Choice of Natural Science - BIO 111/BIO 112, CHM 151/CHM 152, PHY 110/110A, PHY 151/PHY 152, or PHY 251/PHY 252 Recommendation for AE Students: CHM 152	Pathway Course	1 Elective Credit CHM 151 + CHM 152 = Physical Science Requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement PHY 151 + PHY 152 = Physical Science Requirement PHY 251 + PHY 252 = Physical Science Requirement
	Total	7	8-9			
Fall	Choice of Humanities/Fine Arts	3	3	Choice of Humanities/Fine Arts - ART 111, ART 114, ART 115, DRA 111, ENG 231, ENG 232, ENG 241, ENG 242, MUS 110, MUS 112, or PHI 240 Recommendation for AE Students: ENG 231, ENG 232, ENG 241, ENG 242 or PHI 240	Pathway Course	1 Elective Credit (excluding DRA 111) or ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 171	Pathway Course Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement
	Choice of Social Science Course	3	3	Choice of Social Science from 2 different disciplines - ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation for AE Students: ECO 251	Pathway Course	1 Elective Credit or HIS 111 + HIS 112 = World History Graduation Requirement HIS 131 + HIS 132 = American History Graduation Requirement
	Total	10	11			
Spring	COM 231 - Public Speaking	3	3	Required Course - UGETC: Communications	Pathway Course	1 Elective Credit
	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 172	Pathway Course Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement

	Choice of Social Science Course	3	3	Choice of Social Science from 2 different disciplines- ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation for AE Students: HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210.	Pathway Course	1 Elective Credit or HIS 111 + HIS 112 = World History Graduation Requirement HIS 131 + HIS 132 = American History Graduation Requirement
	Total	10	11			
	Grand Total	35		Associate in Science Pathway Complete		CCP Special Permission Form Required to complete remainder of Associate in Science Degree
Fall	Choice of Mathematics or Natural Science Course	4	5	Choice of Mathematics or Natural Science - MAT 172, MAT 175, 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 for AE Students: MAT 271	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.	
	Choice of Health/Wellness Course(s)	2	3	Choice of Health/Wellness - HEA 110, PED 110, or two 1-credit PED activity courses Recommendation for AE Students: PED 110		
	UGETC or General Education Electives	3-4	Varies	UGETC or General Education Electives Recommendation for AE student to select one from the following: BIO 111, COM 110, ECO 252, or PHI 240	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	3	4	CAA Elective Course(s) Recommendation for AE Students: DFT 170	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	Total	11-12	Varies			
Spring	Choice of Mathematics or Natural Science Course	4	6	Choice of Mathematics or Natural Science - MAT 172, MAT 175, 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 for AE Student: PHY 251	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.	

	CAA Elective Course(s)	2	3	CAA Elective Course(s) Recommendation for AE Student: EGR 150	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	4	5	CAA Elective Course(s) Recommendations for AE Students: MAT 272	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	2-4	Varies	CAA Elective Course(s) Recommendations for AE Students: MAT 280, BIO 111, COM 110, CSC 151, or ECO 252.	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	Total	12-14	Varies			
	Grand Total	60-61		Associate in Science Degree Complete with the majority of degree requirements met for AE.		Option to Complete Associate in Engineering if stayed 1 additional semester. Recommend speaking with receiving transfer institution.
Fall	MAT 273 - Calculus III	4	5	Required Course - GEN ED: Math	Course Only Offered in Fall	
	PHY 252 - General Physics II	4	6	Required Course - UGETC: Natural Science	Course Only Offered in Fall	1 Elective Credit or May be combined with PHY 252 to satisfy the physical science requirement; PHY 251 + PHY 252 = Physical Science Requirement
	Total	8	11			
	Grand Total			Associate in Engineering Complete		
	Based on 2025-2026 Academic Catalog					
	Updated 3/6/2025					

CCP Associate in Science Degree Course Sequencing in 2 Years for Pre- Engineering



Goal: Complete an Associate in Science Pathway (P1042C) and Degree (A10400) in 2 Years. Also complete as many core engineering requirements.

AS Graduates will be able to transfer with junior-level status in almost any academic or pre professional field ranging from traditional academic areas such as computer science, engineering, mathematics, the sciences or professional programs that require strong mathematics and science backgrounds.

The [Comprehensive Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the University of North Carolina (UNC) System is intended to provide smooth transfer for community college students who wish to continue their education at constituent institutions of the University of North Carolina System. The [Independent Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the Signatory Institutions of North Carolina Independent Colleges and Universities (NCICU) is intended to provide smooth transfer for community college students who wish to continue their education at an NCICU Signatory Institution.

*AS Pathway Note: OPTIONAL GENERAL EDUCATION HOURS (0-8 SHC) A student may take up to 8 SHC of foreign language courses and accompanying labs, in a single language, designated as General Education in the CAA as a part of this pathway. These courses are not a part of the Universal General Education Transfer Component. Students who complete these courses with a grade of "C" or better will receive transfer credit. The receiving university will determine whether the courses will count as general education, pre-major, or elective credit.

**High school students in the CCP College Transfer Pathway leading to the Associate in Science must complete the entire pathway before taking additional courses in the Associate in Science degree with the exception of mathematics courses beyond MAT 271.

Note: General Education electives should be selected from courses classified as general education within the [Comprehensive Articulation Agreement \(CAA\)](#). Students should select these courses based on their intended major and transfer university. 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 consult with the transfer guides available at <https://www.cfnc.org/plan-your-future/plan-for-college/transfer-student-planner/to-unc-system-institutions/>.

Semester	Course	Cr Hrs	Co Hrs	Course Designation	Course Notes	Dual Credit Notes
Fall	ACA 122 - College Transfer Success	1	2	Required Course	Pathway Course	
	ENG 111 - Writing & Inquiry	3	3	Required Course - UGETC: English Comp	Pathway Course	ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 171	Pathway Course Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement
	Choice of Natural Science Sequence	4	5-6	Choice of Natural Science - BIO 111/BIO 112, CHM 151/CHM 152, PHY 110/110A, PHY 151/PHY 152, or PHY 251/PHY 252 Recommendation for AE Students: CHM 151	Pathway Course	1 Elective Credit CHM 151 + CHM 152 = Physical Science Requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement PHY 151 + PHY 152 = Physical Science Requirement PHY 251 + PHY 252 = Physical Science Requirement
	Total	12	15-16			
Spring	ENG 112 - Writing/Research in the Disciplines	3	3	Required Course - UGETC: English Comp	Pathway Course	ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 172	Pathway Course Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement
	Choice of Natural Science Sequence	4	5-6	Choice of Natural Science - BIO 111/BIO 112, CHM 151/CHM 152, PHY 110/110A, PHY 151/PHY 152, or PHY 251/PHY 252 Recommendation for AE Students: CHM 152	Pathway Course	1 Elective Credit CHM 151 + CHM 152 = Physical Science Requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement PHY 151 + PHY 152 = Physical Science Requirement PHY 251 + PHY 252 = Physical Science Requirement
	Choice of Social Science Course	3	3	Choice of Social Science from 2 different disciplines - ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation for AE Students: ECO 251	Pathway Course	1 Elective Credit or HIS 111 + HIS 112 = World History Graduation Requirement HIS 131 + HIS 132 = American History Graduation Requirement
	Total	14	16-17			
Summer	Choice of Humanities/Fine Arts	3	3	Choice of Humanities/Fine Arts - ART 111, ART 114, ART 115, DRA 111, ENG 231, ENG 232, ENG 241, ENG 242, MUS 110, MUS 112, or PHI 240 Recommendation for AE Students: ENG 231, ENG 232, ENG 241, ENG 242 or PHI 240	Pathway Course	1 Elective Credit (excluding DRA 111) or ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	Choice of Social Science Course	3	3	Choice of Social Science from 2 different disciplines- ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation for AE Students: HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210.	Pathway Course	1 Elective Credit or HIS 111 + HIS 112 = World History Graduation Requirement HIS 131 + HIS 132 = American History Graduation Requirement
	COM 231 - Public Speaking	3	3	Required Course - UGETC: Communications	Pathway Course	1 Elective Credit
	Total	9	9			

	Grand Total	35		Associate in Science Pathway Complete		CCP Special Permission Form Required to complete remainder of Associate in Science Degree
Fall	Choice of Mathematics or Natural Science Course	4	5	Choice of Mathematics or Natural Science - MAT 172, MAT 175, 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 for AE Students: MAT 271	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.	
	Choice of Health/Wellness Course(s)	2	3	Choice of Health/Wellness - HEA 110, PED 110, or two 1-credit PED activity courses Recommendation for AE Students: PED 110		
	UGETC or General Education Electives	3-4	Varies	UGETC or General Education Electives Recommendation for AE student to select one from the following: BIO 111, COM 110, ECO 252, or PHI 240	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	1-2	4	CAA Elective Course(s) Recommendation for AE Students: DFT 170	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	Total	11-12	Varies			
Spring	Choice of Mathematics or Natural Science Course	4	6	Choice of Mathematics or Natural Science - MAT 172, MAT 175, 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 for AE Student: PHY 251	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.	

	CAA Elective Course(s)	1-1	3	CAA Elective Course(s) Recommendation for AE Student: EGR 150	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	1-3	5	CAA Elective Course(s) Recommendations for AE Students: MAT 272	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	CAA Elective Course(s)	2-4	Varies	CAA Elective Course(s) Recommendations for AE Students: MAT 280, BIO 111, COM 110, CSC 151, or ECO 252.	Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	
	Total	12-14	Varies			
	Grand Total	60-61		Associate in Science Degree Complete with the majority of degree requirements met for AE.		Option to Complete Associate in Engineering if stayed 1 additional semester. Recommend speaking with receiving transfer institution.
Fall	MAT 273 - Calculus III	4	5	Required Course - GEN ED: Math	Course Only Offered in Fall	
	PHY 252 - General Physics II	4	6	Required Course - UGETC: Natural Science	Course Only Offered in Fall	1 Elective Credit or May be combined with PHY 252 to satisfy the physical science requirement; PHY 251 + PHY 252 = Physical Science Requirement
	Total	8	11			
	Grand Total			Associate in Engineering Complete		
	Based on 2025-2026 Academic Catalog					
	Updated 3/6/2025					

Early College Associate in Science (A10400EC) Course Sequencing

Goal: Early College Student to complete the Pre-Calculus sequence under Associate in Science Degree then change to Associate in Engineering once Calc. Ready.

AS Graduates will be able to transfer with junior-level status in almost any academic or pre professional field ranging from traditional academic areas such as computer science, engineering, mathematics, the sciences or professional programs that require strong mathematics and science backgrounds.

The [Comprehensive Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the University of North Carolina (UNC) System is intended to provide smooth transfer for community college students who wish to continue their education at constituent institutions of the University of North Carolina System. The [Independent Articulation Agreement](#) between the North Carolina Community College System (NCCCS) and the Signatory Institutions of North Carolina Independent Colleges and Universities (NCICU) is intended to provide smooth transfer for community college students who wish to continue their education at an NCICU Signatory Institution.

Note: General Education electives should be selected from courses classified as general education within the [Comprehensive Articulation Agreement \(CAA\)](#). Students should select these courses based on their intended major and transfer university. 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 consult with the transfer guides available at <https://www.cfnc.org/plan-your-future/plan-for-college/transfer-student-planner/to-unc-system-institutions/>

Semester	Course	Cr Hrs	Co Hrs	Course Designation	Course Notes	Dual Credit Notes
Fall Freshman						
Spring Freshman	ACA 122 - College Transfer Success	1	2	Required Course		
	Total	1	2			
Fall Sophomore	Choice of Social Science Course	3	3	Choice of Social Science from 2 different disciplines- ECO 251, ECO 252, HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210 Recommendation for AE Students: HIS 111, HIS 112, HIS 131, HIS 132, POL 120, PSY 150, or SOC 210.	Pathway Course	1 Elective Credit or HIS 111 + HIS 112 = World History Graduation Requirement HIS 131 + HIS 132 = American History Graduation Requirement
	Total	3	3			
Spring Sophomore	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 171	Pathway Course for AS Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement
	Total	3	3			
Summer Sophomore	Choice of Math Course	4	5	Choice of UGETC Math - MAT 171, MAT 172, MAT 175, MAT 263, MAT 271, or MAT 272 Recommendation for AE Students: MAT 172	Pathway Course for AS Students cannot receive credit for MAT 175 if they have credit for MAT 171-172.	1 Credit; Satisfies Fourth Math Graduation requirement
				Calculus Prerequisites met. Change from Associate in Science to Associate in Engineering Degree		CCP Special Permission Form Required to change Program of Study from AS to AE
Fall Junior	ENG 111 - Writing & Inquiry	3	3	Required Course - UGETC: English Comp		ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	MAT 271 - Calculus I	4	5	Required Course - UGETC: Math	Course Only Offered in Fall	1 Credit; Satisfies Fourth Math Graduation requirement
	ECO 251 - Principles of Microeconomics	3	3	Required Course - UGETC: Social/Behavioral Science		1 Elective Credit

	Choice of Select General Education and Pre Major Elective Course(s) DFT 170 is RECOMMENDED	3	Varies	Choice of BIO 111, CHM 152, COM 110, CSC 151, DFT 170, ECO 252, MAT 280, or PED 110	DFT 170 is Only Offered in Fall CSC 151 is Only Offered in Fall MAT 280 is Only Offered in Spring Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.	1 Elective Credit (excluding COM 110, CSC 151, DFT 170, MAT 280, PED 110) CHM 152 May be combined with CHM 151 to satisfy the physical science requirement; CHM 151 + CHM 152 = Physical Science Requirement BIO 112 May be combined with BIO 112 to satisfy the biology requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement
	Total	13	Varies			
Spring Junior	ENG 112 - Writing/Research in the Disciplines	3	3	Required Course - UGETC: English Comp		ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	MAT 272 - Calculus II	4	5	Required Course - UGETC: Math	Course Only Offered in Spring	1 Credit; Satisfies Fourth Math Graduation requirement
	PHY 251 - General Physics I	4	6	Required Course - UGETC: Natural Science	Course Only Offered in Spring	1 Elective Credit or May be combined with PHY 252 to satisfy the physical science requirement; PHY 251 + PHY 252 = Physical Science Requirement
	EGR 150 - Intro to Engineering	2	3	Required Course - CAA Pre Major/Elective	Course Only Offered in Spring	
	Total	13	17			
Summer Junior	Choice of Humanities/Fine Arts	3	3	Choice of Humanities/Fine Arts - COM 231, ENG 231, ENG 232, ENG 241, or ENG 242		1 Elective Credit or ENG 111 + ENG 112 + (ENG 231 or ENG 232) = English III ENG 111 + ENG 112 + (ENG 241 or ENG 242) = English IV
	COM 231 - Public Speaking	3	3	Required Course - UGETC: Communications		1 Elective Credit
	Total	6	6			
Fall Senior	CHM 151 - General Chemistry I	4	6	Required Course - UGETC: Natural Science		1 Elective Credit or May be combined with CHM 152 to satisfy the physical science requirement; CHM 151 + CHM 152 = Physical Science Requirement
	MAT 273 - Calculus III	4	5	Required Course - GEN ED: Math	Course Only Offered in Fall	
	PHY 252 - General Physics II	4	6	Required Course - UGETC: Natural Science	Course Only Offered in Fall	1 Elective Credit or May be combined with PHY 252 to satisfy the physical science requirement; PHY 251 + PHY 252 = Physical Science Requirement
	Total	12	17			
Spring Senior	Choice of General Education Course	3-4	Varies	Choice of General Education Course - BIO 111, CHM 152, COM 110, ECO 252 or PHI 240		1 Elective Credit (excluding COM 110) or CHM 152 may be combined with CHM 151 to satisfy the physical science requirement; CHM 151 + CHM 152 = Physical Science Requirement BIO 111 + BIO 112 + BIO EOC Exam = Biology Graduation Requirement

	Choice of Select General Education and Pre Major Elective Course(s)	8-9	Varies	Choice of BIO 111, CHM 152, COM 110, CSC 151, DFT 170, ECO 252, MAT 280, or PED 110	<p>DFT 170 is Only Offered in Fall CSC 151 is Only Offered in Fall MAT 280 in Only Offered in Spring</p> <p>Courses should be selected from courses classified as general education within the Comprehensive Articulation Agreement (CAA). Students should select these courses based on their intended major and transfer university. 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.</p>	<p>1 Elective Credit (excluding COM 110, CSC 151, DFT 170, MAT 280, PED 110)</p> <p>CHM 152 May be combined with CHM 151 to satisfy the physical science requirement; CHM 151 + CHM 152 = Physical Science Requirement</p> <p>BIO 112 May be combined with BIO 112 to satisfy the biology requirement BIO 111 + BIO 112 + BIO EOC = Biology Graduation Requirement</p>
	Total	12	Varies			
	Grand Total	60-61		Associate in Engineering Degree Complete		
	Based on 2025-2026 Academic Catalog					
	Updated 3/6/2025					

College Transfer Programs

A 10 40 0AE 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 025	3
ENG 112	Writing/Research in the Disciplines			ENG 111	3
MATHEMATICS					8-9
Select 2 courses from: MAT 171 (MAT 035 or MAT 110 or MAT 143 or MAT 152 with a C or higher), MAT 172 (MAT 171 with a grade of C or higher), MAT 175 (MAT 035 or MAT 110 or MAT 143 or MAT 152 with a 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), or MAT 272 (MAT 271 with a grade of C or higher). Note: Students can not 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 025 and MAT 025), CHM 151-152 (ENG 025 and MAT 025, 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 025 and MAT 025), ECO 252 (ENG 025 and MAT 025), HIS 111 (ENG 025), HIS 112 (ENG 025), HIS 131 (ENG 025), HIS 132 (ENG 025), POL 120 (ENG 025), PSY 150 (ENG 025), or SOC 210 (ENG 025). 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 025), 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
Select 2 courses from: MAT 172 (MAT 035 or MAT 110 or MAT 143 or MAT 152 with a 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 025 and MAT 025), BIO 112 (BIO 111), CHM 151 (ENG 025 and MAT 025, 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), or PHY 252 (MAT 272 and PHY 251). 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.					
			Varies	Varies – pre-requisites in parentheses	4
			Varies	Varies – pre-requisites in parentheses	4
HUMANITIES/FINE ARTS					3
Select 1 course from: ART 111 (none), ART 114 (ENG 025), ART 115 (ENG 025), 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					
				Varies – pre-requisites in parentheses	3
COMMUNICATIONS					3
COM 231	Public Speaking			ENG 111	3
OTHER GENERAL EDUCATION HOURS					2-3
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					
				Varies	2-3
ADDITIONAL COURSEWORK					11-12
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.					
				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.