

**Bachelor of Science in Chemistry**  
**Materials Science Concentration, ACS Certified**  
**Transfer Curriculum Planning Guide and Baccalaureate Degree Plan**  
**Fayetteville State University**  
**(2021-2022)**

University College Core Curriculum (39 Credits)	Course Number <sup>1</sup>	Cr.	FSU Equivalent
<b>Transitional Studies – University Studies (2 Credits)</b> <i>Select one option from (UNIV 101/102) or UNIV 110 or UNIV 111 or UNIV 112</i>	ACA 122 (1 cr.)	2	Waived with 30 credit hours <sup>2</sup>
<b>Transitional Studies – Life Skills (2 Credits)</b> <i>Select two credits from the following: ENTR 100 or FINC 100 or GEOG 110 or HEED 112 or HEED 113 or PEDU 101 or PEDU 107 or PEDU 112 or PEDU 120 or PEDU 122 or PEDU 130 or PEDU 132 or PEDU 140</i>	HEA 110 or any PED course	2	Waived with AA/AS, NOT with AAS/AGE <sup>2,3</sup>
<b>Communication Skills – Written Communication (3 Credits) – ENGL 110</b>	ENG 111	3	ENG 110
<b>Information Literacy (3 Credits) – ENGL 120</b>	ENG 112	3	ENG 120
<b>Communication Skills – Oral Communication (3 Credits) BADM 215 SPEE 200</b>	COM 120 or COM 231	3	BADM 215 or SPEE 200
<b>Reasoning Skills – Critical Thinking (3 Credits)</b> <i>Select one from the following: PHIL 110 or PHIL 220</i>	HUM 115	3	Waived with 60 credit hours <sup>2</sup>
<b>Reasoning Skills – Quantitative Reasoning (3 Credits)</b> <i>Select one from the following: MATH 130 or MATH 131</i>	MAT 172	3	MATH 130 or MATH 131
<b>Scientific Literacy – Natural Sciences (8 Credits)<sup>4</sup></b> <i>Select from the following: CHEM 141/141L and CHEM 161/161L</i>	CHM 151	4	CHEM 141/141L
	CHM 152	4	CHEM 161/161L
<b>Scientific Literacy – Social Sciences (3 Credits)</b> <i>CRJC 210 or ECON 211 or ECON 212 or GEOG 210 or HIST 212 or HIST 271 or POLI 200 or POLI 210 or POLI 220 or POLI 270 or PSYC 210 or SOCI 210</i>	Social science elective	3	
<b>Humanities and Creative Arts (3 Credits)</b> <i>Select one from the following: ART 210 or COMM 220 or ENGL 220 or ENGL 223 or ENGL 240 or ENGL 250 or ENGL 253 or HIST 210 or HUMN 211 or HUMN 212 or MUSI 210 or MUSI 225 or MUSI 260 or PHIL 210 or RELI 215 or THEA 203</i>	Hum/Fine Arts elective	3	
<b>Global Literacy (3 Credits)<sup>5</sup></b> <i>Select one from the following: ANTH 210 or ART 150 or ART 215 or BADM 210 or CHIN 110 or CHIN 120 or ENGL 211 or ENGL 212 or FREN 110 or FREN 120 or GEOG 220 or HIST 110 or HIST 120 or HIST 270 or PHIL 211 or POLI 230 or SOCI 150 or SPAN 110 or SPAN 112 or SPAN 120 or SPAN 122 or SPAN 211 or THEA 242 or YORU 110 or YORU 120</i>		3	Waived with AA/AS, NOT with AAS/AGE <sup>2</sup>
<b>Ethics and Civic Engagement (3 Credits)</b> <i>Select three credits from the following: BADM 220 or CRJC 203 or EDUC 211 or ENEC 210 or ENGL 232 or ENGL 233 or (ETCE 101/102/103) or ETCE 200 or GEOG 270 or HCM 200 or HIST 211 or PHIL 120 or PHIL 212 or PHIL 250 or PNUR 210 or POLI 150 or SPTM 210 or SWRK 220</i>		3	Waived with 60 credit hours <sup>2</sup>

**Notes**

- 1 Courses are for the North Carolina Community College (NCCC) system. Other courses may satisfy requirement.
- 2 Students do not earn credit if any requirement is waived. All students must earn at least 120 credits to graduate.
- 3 NCCC Associate in Arts (AA), Associate in Science (AS), Associate in Applied Science (AAS), Associate in General Education (AGE). Per NC Comprehensive Articulation Agreement, NCCC graduates with AA or AS have completed FSU general education requirements. NCCC general education courses not used for core may be applied to free electives or used to reach 120 credits. AAS, AFA, and other specific degrees may be governed by articulation agreements.
- 4 At least one Natural Science class must include a lab.
- 5 Not required for students with 30 or more transfer credits from a foreign institution. Students do not earn credit if requirement is waived.

<b>Chemistry Program Requirements (81 Credits)</b>	<b>Course Number</b>	<b>Cr.</b>	<b>FSU Equivalent</b>
<b>Chemistry Courses (38 Credits):</b> BICH 411 and CHEM 200 and (CHEM 211 and CHEM 211L) and (CHEM 223 and CHEM 223L) and (CHEM 225 and CHEM 225L) and (CHEM 311 and CHEM 311L) and (CHEM 313 and CHEM 313L) and (CHEM 314 and CHEM 314L) and CHEM 350 and CHEM 421 and CHEM 450 and CHEM 499		3	BICH 411
		1	CHEM 200
	CHM 263	4	CHEM 211/211L
	CHM 251	4	CHEM 223/223L
	CHM 252	4	CHEM 225/225L
		5	CHEM 311/311L
		4	CHEM 313/313L
		4	CHEM 314/314L
		1	CHEM 350
		3	CHEM 421
		2	CHEM 450
		3	CHEM 499
	<b>Correlative Requirements (25 Credits)</b> NSCI 100 and (BIOL 150 and BIOL 150L) and MATH 142 and MATH 241 and MATH 242 and PHYS 125 and PHYS 125L and PHYS 126 and PHYS 126L		1
BIO 111		4	BIOL 150/150L
MAT 271		4	MATH 142
MAT 272		4	MATH 241
MAT 273		4	MATH 242
PHY 251		4	PHYS 125/125L
PHY 252		4	PHYS 126/126L
<b>Concentration: (18 Credits)</b> MATS 160 and MATS 204 and MATS 260 and MATS 301 and MATS 311 and MATS 321		3	MATS 160
		3	MATS 204
		3	MATS 260
		3	MATS 301
		3	MATS 311
		3	MATS 321
<b>Waived Core Requirements</b> <i>The credits in this area increase as requirements are waived without credit in the university core – typically 7 credits to equal 120 credits overall; add extra lines as needed.</i>			
<b>Total Credits</b>		120	
<b>Transfer Credits</b>			

**Baccalaureate Degree Plan (A.A.)**

This Plan illustrates how students from North Carolina community colleges can meet degree course requirements in four years. Courses and requirements in Year 1 and Year 2 are from the NC community college catalog. Courses and requirements in Year 3 and Year 4 are from the FSU catalog. Some courses listed below may be taken in an alternate order. Courses fulfilling requirements are listed on the previous pages. For information about prerequisites and other program requirements, consult the appropriate Catalog Program of Study and an advisor. Students should work with advisor to create and update an individual plan.

<b>Year 1 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Academic Transition	ACA 122	1
English Composition	ENG 111	3
Humanities/Fine Arts		3
Social/Behavioral Sciences		3
Math	MAT 171	4
Total:		14

<b>Year 1 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Communications	COM 120 or COM 231	3
English Composition	ENG 112	3
Natural Sciences	CHM 151	4
Social/Behavioral Sciences		3
Additional General Education	MAT 172	4
Total:		17

<b>Year 2 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Social/Behavioral Sciences		3
Additional General Education	MATH 271	4
Additional General Education	BIO 111	4
Pre-Major/Elective	CHM 152	4
Total:		15

<b>Year 2 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Humanities/Fine Arts		3
Pre-Major/Elective	MAT 272	4
Pre-Major/Elective	CHM 251	4
Pre-Major/Elective	CHM 263	4
Total:		15

<b>Year 3 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Chemical Literature: Search & Analysis	CHEM 200	1
Organic Chemistry II Lecture	CHEM 225	3
Organic Chemistry II Lab	CHEM 225L	1
College Physics I Lecture	PHYS 125	3
College Physics I Lab	PHYS 125L	1
Calculus with Analytic Geometry III	MATH 242	4
Introduction to Materials Science	MATS 160	3
Total:		16

<b>Year 3 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Biochemistry I	BICH 411	3
Instrumental Analysis Lecture	CHEM 311	3
Instrumental Analysis Lab	CHEM 311L	2
Introduction to Undergraduate Research	CHEM 350	1
College Physics II Lecture	PHYS 126	3
College Physics II Lab	PHYS 126L	1
Properties of Engineering Materials	MATS 204	3
Total:		16

<b>Year 4 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Physical Chemistry I Lecture	CHEM 313	3
Physical Chemistry I Lab	CHEM 313L	1
Inorganic Chemistry	CHEM 421	3
Undergraduate Research	CHEM 450	2
Introduction to Nanomaterials	MATS 260	3
Introduction to Polymer Science	MATS 301	3
Total:		15

<b>Year 4 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Physical Chemistry II Lecture	CHEM 314	3
Physical Chemistry II Lab	CHEM 314L	1
Chemistry Capstone	CHEM 499	3
Scanning Electron Microscopy & Microanalysis	MATS 311	3
X-Ray Diffraction Analysis	MATS 321	3
Total:		13

**Notes**

\* Indicates a course recommended by the program. Other courses listed under the requirement may be used.

**Baccalaureate Degree Plan (A.S.)**

This Plan illustrates how students from North Carolina community colleges can meet degree course requirements in four years. Courses and requirements in Year 1 and Year 2 are from the NC community college catalog. Courses and requirements in Year 3 and Year 4 are from the FSU catalog. Some courses listed below may be taken in an alternate order. Courses fulfilling requirements are listed on the previous pages. For information about prerequisites and other program requirements, consult the appropriate Catalog Program of Study and an advisor. Students should work with advisor to create and update an individual plan.

<b>Year 1 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Academic Transition	ACA 122	1
English Composition	ENG 111	3
Precalculus Algebra	MAT 171	4
Natural Sciences	BIO 111	4
Communication/Humanities/Fine Arts		3
Total:		15

<b>Year 1 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
English Composition	ENG 112	3
Math	MAT 172	4
Natural Sciences	CHM 151	4
Social/Behavioral Sciences		3
Humanities/Fine Arts		3
Total:		17

<b>Year 2 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Communication/Humanities/Fine Arts		3
Additional General Education	MAT 271	4
Additional General Education		3
Pre-Major/Elective	CHM 152	4
Total:		14

<b>Year 2 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Social/Behavioral Sciences		3
Additional General Education	MAT 272	4
Pre-Major/Elective	CHM 251	4
Pre-Major/Elective	CHM 263	4
Total:		15

<b>Year 3 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Chemical Literature: Search & Analysis	CHEM 200	1
Organic Chemistry II Lecture	CHEM 225	3
Organic Chemistry II Lab	CHEM 225L	1
College Physics I Lecture	PHYS 125	3
College Physics I Lab	PHYS 125L	1
Calculus with Analytic Geometry III	MATH 242	4
Introduction to Materials Science	MATS 160	3
Total:		16

<b>Year 3 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Biochemistry I	BICH 411	3
Instrumental Analysis Lecture	CHEM 311	3
Instrumental Analysis Lab	CHEM 311L	2
Introduction to Undergraduate Research	CHEM 350	1
College Physics II Lecture	PHYS 126	3
College Physics II Lab	PHYS 126L	1
Properties of Engineering Materials	MATS 204	3
Total:		16

<b>Year 4 Fall</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Physical Chemistry I Lecture	CHEM 313	3
Physical Chemistry I Lab	CHEM 313L	1
Inorganic Chemistry	CHEM 421	3
Undergraduate Research	CHEM 450	2
Introduction to Nanomaterials	MATS 260	3
Introduction to Polymer Science	MATS 301	3
Total:		15

<b>Year 4 Spring</b>		
<b>Requirement</b>	<b>Course</b>	<b>Cr</b>
Physical Chemistry II Lecture	CHEM 314	3
Physical Chemistry II Lab	CHEM 314L	1
Chemistry Capstone	CHEM 499	3
Scanning Electron Microscopy & Microanalysis	MATS 311	3
X-Ray Diffraction Analysis	MATS 321	3
Total:		13

**Notes**

- \* Indicates a course recommended by the program. Other courses listed under the requirement may be used.