

## MATERIALS CHEMISTRY MAJOR (MATCHEM.BS)

<u>Required Courses</u>		<u>Hrs.</u>	<u>Prereq.</u>	<u>Rec.Yr.</u>
CHEM 161	Acc Gen Chem for Science Majors	3	HS Chem & placement or CHEM 105, 107L; Coreq CHEM 163L	Fr
CHEM 163L	Acc Gen Chem for Science Maj Lab	1	HS Chem & placement or CHE 105, 107L; Coreq CHEM 161	
	<u>OR</u>			
CHEM 131	Gen Chemistry for Sci Majors I	3	Coreq CHEM 133L	Fr
	<i>*Prerequisite: Must have passed at least one year of high school chemistry or one semester of college chemistry equivalent to CHEM 105/107L or above AND at least one of the following: MATH ACT score of 20, MATH SAT score of 500, grade of C or better in one of the classes: MATH 103, 110, 112, 115, 130, 161.</i>			
CHEM 133L	Gen Chemistry for Sci Maj I Lab	1	Coreq CHEM 131	
CHEM 132	Gen Chemistry for Sci Majors II	3	C- or better in CHEM 131, 133L; Coreq CHEM 134L	Fr
CHEM 134L	Gen Chemistry for Sci Maj II Lab	1	Coreq CHEM 132	
CHEM 221	Organic Chemistry I	3	C- or better in CHEM 131, 133L, 132, 134L or 161, 163L; Coreq CHEM 223L	Soph
CHEM 223L	Organic Chemistry I Lab	1	C- or better in CHEM 131, 133L, 132, 134L or 161, 163L; Coreq CHEM 221	Soph
CHEM 222	Organic Chemistry II	3	C- or better in CHEM 221, 223L; Coreq 224L	Soph
CHEM 224L	Organic Chemistry II Lab	1	C- or better in CHEM 221, 223L; Coreq CHEM 222	Soph
CHEM 231	Analytical Chemistry	3	C- or better in CHEM 131, 133L, 132, 134L or 161, 163L; Coreq 233L	Soph
CHEM 233L	Analytical Chemistry Lab	1	C- or better in CHEM 131, 133L, 132, 134L or 161, 163L; Coreq CHEM 231	Soph
CHEM 301	Laboratory Safety Management	1	CHEM 222, 224L	Jr
CHEM 320	Physical Chemistry	3	C- or better in CHEM 231, 233L, MATH 161 or 162; Coreq CHEM 322L	Jr
CHEM 322L	Physical Chemistry Lab	1	C- or better in CHEM 231, 233L, MATH 161 or 162; Coreq CHEM 320	Jr
CHEM 340	Advanced Inorganic Chemistry	3	C- or better in CHEM 222, 224L, 231, 233L Coreq CHEM 341L	Jr
	<u>OR</u>			
CHEM 350	Biochemistry	3	C- or better in CHEM 222, 224L	Jr
CHEM 365	Adv Physical Chemistry	3	C- or better in CHEM 320, 322L, MATH 162	Jr
CHEM 370	Advanced Chemistry Topics	2	CHEM 222, 224L, 231, 233L	Jr
CHEM 397/399	Summer Research or Research	0-2	CHEM 221, 223L, 231, 233L	Jr
^CHEM 497	Seminar	2	Sr Standing	Sr
MATH 115	Elementary Statistics	3		Fr
MATH 161	Calculus I	4	C or better in MATH 130 or placement	Fr
MATH 162	Calculus II	4	C (2.0) or better in MATH 161; Pre or coreq MATH 163	Fr
MATH 163	Technology for Calculus	1	Coreq MATH 162	Fr
PHYS 151	General Physics I	4	Official math placement	
	<u>OR</u>			
PHYS 161	General Physics w/Calculus	4	Pre or Coreq MATH 161	Fr/Soph
PHYS 152	General Physics II	4	Official math placement	Fr/Soph
	<u>OR</u>			
PHYS 162	General Physics II w/Calculus	4	Pre or Coreq MATH 161	
PHYS 320	Materials Science	3	PHYS 210; Coreq PHYS 321L	Jr
PHYS 321L	Materials Science Lab	1	Coreq PHYS 320	
PHYS 330	Solid State Physics	3	PHYS 210; MATH 162	Jr
PHYS 331L	Solid State Physics Lab	1	Coreq PHYS 330	

59-66 total hours

**\*\*REMINDERS\*\***

1. Departmentally approved substitutes may be taken in place of certain labs.
  2. CHEM 105-106 and labs do not count toward a major or minor in Chemistry.
  3. Students cannot receive credit for both PHYS 151 and PHYS 161 or PHYS 152 and PHYS 162.
- ^Satisfies advanced writing requirement

NAME: \_\_\_\_\_

**B.S. Degree: Materials Chemistry Major (for students entering in Fall 2024/Spring 2025)**

In the "WHAT" column, enter the specific course number when applicable--e.g. HIST 121. In the "WHEN" column, enter the term and year in which the requirement is satisfied--e.g., sp '20.

Liberal Arts Core	
WHAT	WHEN
_____	ENGL 101* w/ C (2.0) [3 hrs]
_____	ENGL 110 w/ C (2.0)* [3 hrs]
_____	COMM 211 w/ C (2.0) [3 hrs]
_____	Dept senior seminar/writing course
_____	Met by: _____ CHEM 497 [2 hrs]
_____	FYEX 101 [3 hrs]
_____	FYEX 102 [1 hr]
_____	FYEX 103/104/105/106/107 [1 hr]
_____	FYEX 103/104/105/106/107 [1 hr]
_____	FYEX 401 [1 hr]
_____	Foundational Scientific Inquiry [3-4 hrs]
_____	Foundational Quantitative Analysis [3-4 hrs]

*No more than two lens courses may come from same departmental prefix and one lens must be taken at 300 level or above.*

_____	_____	Ethical/Spiritual Explor Lens (ETSP) [3 hrs]
_____	_____	Aesthetic Expression Lens (AEXP) [3 hrs]
_____	_____	Per & Soc Well Being Lens (PSWB) [3 hrs]
_____	_____	Cultural Perspectives Lens (CEXP) [3 hrs]
_____	_____	Experimental Inquiry Lens (EXIN) [3 hrs]

37 – 39 Total semester hours

\_\_\_\_\_ 120 semester hours required for graduation

\*Enter NA (not applicable) if waived upon admission

➤ Only six hours of any minor may overlap with the required credit hours of a student's chosen major. The overlap constraint is not applicable to courses that majors or minors MUST take in others departments.

Materials Chemistry (B.S.)	
WHAT	WHEN
_____	CHEM 161 [3 hrs]
_____	CHEM 163L [1 hr]
_____	OR
_____	CHEM 131 [3 hrs]
_____	CHEM 133L [1 hr]
_____	CHEM 132 [3 hrs]
_____	CHEM 134L [1 hr]
_____	CHEM 221 [3 hrs]
_____	CHEM 223L [1 hr]
_____	CHEM 222 [3 hrs]
_____	CHEM 224L [1 hr]
_____	CHEM 231 [3 hrs]
_____	CHEM 233L [1 hr]
_____	CHEM 301 [1 hr]
_____	CHEM 320 [3 hrs]
_____	CHEM 322L [1 hr]
_____	CHEM 340/350 [3 hrs]
_____	CHEM 365 [3 hrs]
_____	CHEM 370 [2 hrs]
_____	CHEM 397/399 [0-2 hrs]
_____	CHEM 497 [2 hrs]
_____	MATH 115 [3 hrs]
_____	MATH 161 [4 hrs]
_____	MATH 162 [4 hrs]
_____	MATH 163 [1 hr]
_____	PHYS 151/161 [4 hrs]
_____	PHYS 152/162 [4 hrs]
_____	PHYS 320 [3 hrs]
_____	PHYS 321L [1 hr]
_____	PHYS 330 [3 hrs]
_____	PHYS 331L [1 hr]
_____	59-66 semester hours

➤ Departmentally approved substitutes may be taken in place of certain laboratories.

➤ Students enrolled in a course for which there is a lab must also enroll in the lab or its approved substitute, except with approval of the department.

➤ Except in specifically approved majors, a maximum of 52 hours in an academic discipline may count toward graduation. Three hours over the limit may count to accommodate an internship in the discipline.

➤ The following limits apply when counting hours applicable toward the 120 required for graduation: 4 hours of physical activity (EXSC) and 8 hrs of MUSC 149.