

## 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<br>CHEM 105, 107L; Coreq CHEM 163L                     | Fr      |
| CHEM 163L  | Acc Gen Chem for Science Maj Lab | 1              | HS Chem & placement or<br>CHE 105, 107L; Coreq CHEM 161                       |         |
| 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;<br>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,<br>132, 134L or 161, 163L; Coreq<br>CHEM 223L | Soph    |
| CHEM 223L  | Organic Chemistry I Lab          | 1              | C- or better in CHEM 131, 133L,<br>132, 134L or 161, 163L; Coreq<br>CHEM 221  | Soph    |
| CHEM 222   | Organic Chemistry II             | 3              | C- or better in CHEM 221, 223L;<br>Coreq 224L                                 | Soph    |
| CHEM 224L  | Organic Chemistry II Lab         | 1              | C- or better in CHEM 221, 223L;<br>Coreq CHEM 222                             | Soph    |
| CHEM 231   | Analytical Chemistry             | 3              | C- or better in CHEM 131, 133L,<br>132, 134L or 161, 163L; Coreq 233L         | Soph    |
| CHEM 233L  | Analytical Chemistry Lab         | 1              | C- or better in CHEM 131, 133L,<br>132, 134L or 161, 163L; Coreq<br>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,<br>MATH 161 or 162; Coreq CHEM<br>322L        | Jr      |
| CHEM 322L  | Physical Chemistry Lab           | 1              | C- or better in CHEM 231, 233L,<br>MATH 161 or 162; Coreq CHEM 320            | Jr      |
| CHEM 340   | Advanced Inorganic Chemistry     | 3              | C- or better in CHEM 222, 224L,<br>231, 233L Coreq CHEM 341L                  | Jr      |
| 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,<br>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<br>placement                                       | Fr      |
| MATH 162   | Calculus II                      | 4              | C (2.0) or better in MATH 161;<br>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   |         |
| 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 |
| 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 2019/Spring 2020)**

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 '00.

| General Education |  | Materials Chemistry (B.S.) |                        |
|-------------------|--|----------------------------|------------------------|
| WHAT              | WHEN   | WHAT                       | WHEN                   |
| _____             | ENGL 101/INDS 106* w/ C (2.0) [3 hrs]        | _____                      | CHEM 161 [3 hrs]       |
| _____             | ENGL 102/INDS 102* w/ C(2.0)* [3 hrs]        | _____                      | CHEM 163L [1 hr]       |
| _____             | COMM 211/INDS 103 w/ C(2.0) [3 hrs]          |                            | OR                     |
|                   | Dept senior seminar/writing course           | _____                      | CHEM 131 [3 hrs]       |
|                   | Met by: _____ CHEM 497 [2 hrs]               | _____                      | CHEM 133L [1 hr]       |
| _____             | BIOL/CHEM/ENVS/PHSC/PHYS w/ lab              | _____                      | CHEM 132 [3 hrs]       |
|                   | [3 hrs]/INDS 112 [4 hrs]                     | _____                      | CHEM 134L [1 hr]       |
| _____             | BIOL/CHEM/ENVS/PHSC/PHYS w/ lab              | _____                      | CHEM 221 [3 hrs]       |
|                   | [3 hrs]/INDS 112 [4 hrs]                     | _____                      | CHEM 223L [1 hr]       |
| _____             | MATH (except 112,141,203,205)/               | _____                      | CHEM 222 [3 hrs]       |
|                   | BIOL 215/PSYC 230/INDS 114 [3-4 hrs]         | _____                      | CHEM 224L [1 hr]       |
| _____             | RELG/INDS 111 [3-4 hrs]                      | _____                      | CHEM 231 [3 hrs]       |
| _____             | PHIL [3 hrs]/INDS 110 [4 hrs]                | _____                      | CHEM 233L [1 hr]       |
| _____             | INDS 120 [3 hrs]/INDS 116 [4 hrs]            | _____                      | CHEM 301 [1 hr]        |
| _____             | Any literature course/INDS 113[3 hrs]        | _____                      | CHEM 320 [3 hrs]       |
|                   | Fine Arts                                    | _____                      | CHEM 322L [1 hr]       |
|                   | _____ ART (except 265)/                      | _____                      | CHEM 340/350 [3 hrs]   |
|                   | DANC/MUSC/THRE/ENGL 213/                     | _____                      | CHEM 365 [3 hrs]       |
|                   | INDS 107 [3-4 hrs]                           | _____                      | CHEM 370 [2 hrs]       |
|                   | OR   | _____                      | CHEM 397/399 [0-2 hrs] |
|                   | _____ MUSC/THRE [2 hrs]                      | _____                      | CHEM 497 [2 hrs]       |
|                   | _____ same discipline [1 hr]                 | _____                      | MATH 115 [3 hrs]       |
|                   | OR   | _____                      | MATH 161 [4 hrs]       |
|                   | _____ MUSC/THRE [1 hr]                       | _____                      | MATH 162 [4 hrs]       |
|                   | _____ same discipline [1 hr]                 | _____                      | MATH 163 [1 hr]        |
|                   | _____ same discipline [1 hr]                 | _____                      | PHYS 151/161 [4 hrs]   |
| _____             | HIST 100 or 200 level except HIST 201/       | _____                      | PHYS 152/162 [4 hrs]   |
|                   | or INDS 117 [3-4hrs]                         | _____                      | PHYS 320 [3 hrs]       |
| _____             | CJUS/ECON/GEOG/GNST/POLS/PSYC/               | _____                      | PHYS 321L [1 hr]       |
|                   | SOCI [3hrs]/INDS 104 [4 hrs]                 | _____                      | PHYS 330 [3 hrs]       |
| _____             | US Cultural Studies [3 hrs]/INDS 109 [4 hrs] | _____                      | PHYS 331L [1 hr]       |
| _____             | Non-Wester Cultural Studies [3 hrs]/         | _____                      | 59-66 semester hours   |
|                   | INDS 108 [4 hrs]                             |                            |                        |
| _____             | EXSC 110/120/121/130/201/240                 |                            |                        |
|                   | [3 hrs]/INDS 105 [4 hrs]                     |                            |                        |
| _____             | 120 semester hours required for graduation   |                            |                        |

\*Enter NA (not applicable) if waived upon admission or if completing the honors program.

➤ 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.

➤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.