

# FORENSIC CHEMISTRY

## REQUIREMENTS

**CORE CURRICULUM** The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at [marshall.edu/gened](http://marshall.edu/gened).

### CORE 1: CRITICAL THINKING

| CODE    | COURSE NAME              | HRS | GRADE |
|---------|--------------------------|-----|-------|
| FYS 100 | First Year Seminar       | 3   | _____ |
| MTH 229 | Critical Thinking Course | 5   | _____ |
| _____   | Critical Thinking Course | 3   | _____ |

#### Additional University Requirements

|         |  |   |       |
|---------|--|---|-------|
| _____   | Writing Intensive (CHM 357 or CHM 358) | 4 | _____ |
| _____   | Writing Intensive                      | 3 | _____ |
| _____   | Multicultural or International         | 3 | _____ |
| CHM 491 | Capstone                               | 2 | _____ |

### CORE 2:

| CODE             | COURSE NAME                   | HRS | GRADE |
|------------------|-------------------------------|-----|-------|
| ENG 101          | Beginning Composition         | 3   | _____ |
| ENG 201          | Advanced Composition          | 3   | _____ |
| CMM 103          | Fund Speech-Communication     | 3   | _____ |
| MTH 229          | Calculus/Analytic Geom I (CT) | 5   | _____ |
| BSC 120/L        | Principles of Biology I / Lab | 3/1 | _____ |
| _____            | Core II Humanities            | 3   | _____ |
| CJ 200 or CJ 211 | Intro to Criminal Justice     | 3   | _____ |
| _____            | Core II Fine Arts             | 3   | _____ |

## MAJOR-SPECIFIC

All Forensic Chemistry majors are required to take the following courses:

| CODE    | COURSE NAME   | HRS | GRADE | CODE          | COURSE NAME                          | HRS | GRADE |
|---------|---|-----|-------|---------------|--------------------------------------|-----|-------|
| CHM 211 | Principles of Chemistry I   | 3   | _____ | PHY 201       | College Physics I                    | 3   | _____ |
| CHM 217 | Principles of Chemistry I Lab   | 2   | _____ | PHY 202       | College Physics I Lab                | 1   | _____ |
| CHM 212 | Principles of Chemistry II  | 3   | _____ | PHY 203       | College Physics II                   | 3   | _____ |
| CHM 218 | Principles of Chemistry II Lab  | 2   | _____ | PHY 204       | College Physics II Lab               | 1   | _____ |
| CHM 355 | Organic Chemistry I   | 3   | _____ | _____         | Statistics Elective (STA 225 or 345) | 3   | _____ |
| CHM 356 | Organic Chemistry II  | 3   | _____ | MTH 229       | Calculus/Analytic Geom I (CT)        | 5   | _____ |
| CHM 361 | Organic Chemistry II Lab  | 3   | _____ | BSC 120/L     | Principles of Biology I / Lab        | 3/1 | _____ |
| CHM 305 | Research Methods Chemistry  | 1   | _____ | BSC 121/L     | Principles of Biology II / Lab       | 3/1 | _____ |
| CHM 345 | Intro Analytical Chemistry  | 4   | _____ | BSC 322       | Cell Biology                         | 4   | _____ |
| CHM 357 | Physical Chemistry: Quantum or 358<br>Physical Chemistry: Thermo (WI) | 4   | _____ | BSC 324       | Genetics                             | 4   | _____ |
| CHM 365 | Biochemistry  | 3   | _____ | CS 110        | Computer Science I                   | 3   | _____ |
| CHM 411 | Instrumental Methods  | 4   | _____ | _____         | Restricted Elective                  | 3   | _____ |
| CHM 491 | Capstone or CHM 490   | 2   | _____ | _____         | Restricted Elective                  | 3   | _____ |
| CHM 432 | Seminar   | 0   | _____ | CJ 314        | Crime Scene Investigation            | 3   | _____ |
| _____   | 300/400 CHM Elective  | 3   | _____ | CJ 323 or 422 | Criminal Law or Law of Evidence      | 3   | _____ |

## MAJOR INFORMATION

- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities as well as the University writing intensive requirement.
- Course offerings and course attributes are subject to change semesters. Please consult each semester's schedule of courses for availability and attributes.
- Math is based on an ACT Mathematics score of 27 or higher. Students with an ACT Mathematics score less than 27 will be placed in the appropriate mathematics and science courses.
- Statistics Elective: Choose from STA 225 or STA 345.
- Restricted Elective: Choose two courses from BSC 450, CHM 428 or 467. Students are strongly encouraged to engage in a Forensic Chemistry related Capstone Experience (CHM 491).
- A Grade Point Average of 2.0 is required 1) overall, 2) at MU, 3) in all required Chemistry courses, 4) in all Chemistry courses, and 5) in all required Chemistry courses taken at MU.
- Double majors within the Department of Chemistry may include any majors other than the B.S., Major in Chemical Sciences. A double major of Forensic Chemistry with Biochemistry is also currently not permitted.

Area of Emphasis

Major Requirement

College Requirement

General Education Requirement

# FORENSIC CHEMISTRY

This major is intended for students who wish to pursue a career in fields involving forensics. Degrees offered by the Department of Chemistry provide a program of studies that allows the individual to: obtain high quality instruction in chemistry as a scientific discipline, obtain a sound background in preparation for advanced studies, meet the qualifications of professional chemists and accrediting agencies, or prepare for a professional career in medicine, dentistry, pharmacy, medical technology, engineering, nursing and other fields.

|            |   | FALL SEMESTER           |                                      |           |       | SPRING SEMESTER   |  |                                |       |   |
|------------|---|-------------------------|--------------------------------------|-----------|-------|---|--|--------------------------------|-------|---|
|            |   | CODE                    | COURSE NAME                          | HRS       | GRADE | CODE  | COURSE NAME                                    | HRS                            | GRADE |   |
| YEAR ONE   |    | CHM 211                 | Principles of Chemistry I            | ◆         | 3     | MTH 229   | Calculus/Analytic Geom I (CT)                  | ◆                              | 5     |   |
|            |    | CHM 217                 | Principles of Chemistry I Lab        | ◆         | 2     |    | CHM 212  | Principles of Chemistry II     | ◆     | 3 |
|            |   | BSC 120/L               | Principles of Biology I / Lab        | ◆         | 3/1   |    | CHM 218  | Principles of Chemistry II Lab | ◆     | 2 |
|            |   | ENG 101                 | Beginning Composition                | ●         | 3     | BSC 121/L   | Principles of Biology II / Lab                 | ◆                              | 3/1   |   |
|            |   | FYS 100                 | First Year Sem Crit Thinking         | ●         | 3     |   |  |                                |       |   |
|            |   | UNI 100                 | Freshman First Class                 |           | 1     |   |  |                                |       |   |
|            |   | <b>TOTAL HOURS</b>      |                                      | <b>16</b> |       | <b>TOTAL HOURS</b>  |  | <b>14</b>                      |       |   |
|            |   | Summer Term (optional): |                                      |           |       |   |  |                                |       |   |
|            |   | FALL SEMESTER           |                                      |           |       | SPRING SEMESTER   |  |                                |       |   |
|            |   | CODE                    | COURSE NAME                          | HRS       | GRADE | CODE  | COURSE NAME                                    | HRS                            | GRADE |   |
| YEAR TWO   |    | CHM 355                 | Organic Chemistry I                  | ◆         | 3     | CHM 356   | Organic Chemistry II                           | ◆                              | 3     |   |
|            |   |                         | Statistics Elective (STA 225 or 345) | ◆         | 3     | CHM 361   | Organic Chemistry Lab                          | ◆                              | 3     |   |
|            |    | PHY 201                 | College Physics I                    | ◆         | 3     |    | PHY 203  | College Physics II             | ◆     | 3 |
|            |   | PHY 202                 | College Physics I Lab                | ◆         | 1     |    | PHY 204  | College Physics II Lab         | ◆     | 1 |
|            |   | CJ 200                  | Intro to Criminal Justice            | ●         | 3     | CMM 103   | Fund Speech-Communication                      | ●                              | 3     |   |
|            |   |                         |                                      |           |       |  | ENG 201  | Advanced Composition           | ●     | 3 |
|            |   | <b>TOTAL HOURS</b>      |                                      | <b>13</b> |       | <b>TOTAL HOURS</b>  |  | <b>16</b>                      |       |   |
|            |   | Summer Term (optional): |                                      |           |       |   |  |                                |       |   |
|            |   | FALL SEMESTER           |                                      |           |       | SPRING SEMESTER   |  |                                |       |   |
|            |   | CODE                    | COURSE NAME                          | HRS       | GRADE | CODE  | COURSE NAME                                    | HRS                            | GRADE |   |
| YEAR THREE |   | CHM 365                 | Biochemistry                         | ◆         | 3     | CHM 358   | Physical Chemistry I or (CHM 357 in Fall) (WI) | ◆                              | 4     |   |
|            |   | CHM 305                 | Research Methods Chemistry           | ◆         | 1     |   | Core II Humanities (CT)                        | ●                              | 3     |   |
|            |  |                         | Core II Fine Arts                    | ●         | 3     | BSC 322   | Cell Biology                                   | ◆                              | 4     |   |
|            |   | CS 110                  | Computer Science I                   | ◆         | 3     | CJ 323 or   | Criminal Law or Law of Evidence                | ◆                              | 3     |   |
|            |   | CJ 314                  | Crime Scene Investigation            | ◆         | 3     | 422   |  |                                |       |   |
|            |   |                         |                                      |           |       |   |  |                                |       |   |
|            |   | <b>TOTAL HOURS</b>      |                                      | <b>13</b> |       | <b>TOTAL HOURS</b>  |  | <b>14</b>                      |       |   |
|            |   | Summer Term (optional): |                                      |           |       |   |  |                                |       |   |
|            |   | FALL SEMESTER           |                                      |           |       | SPRING SEMESTER   |  |                                |       |   |
|            |   | CODE                    | COURSE NAME                          | HRS       | GRADE | CODE  | COURSE NAME                                    | HRS                            | GRADE |   |
| YEAR FOUR  |   | CHM 345                 | Intro Analytical Chemistry           | ◆         | 4     | CHM 432   | Chemistry Seminar                              | ◆                              | 0     |   |
|            |   | CHM 491                 | Capstone Experience (or CHM 490)     | ◆         | 2     |   | 300/400 CHM Elective                           | ◆                              | 3     |   |
|            |   | BSC 324                 | Genetics                             | ◆         | 4     |   | Restricted Elective                            | ◆                              | 4     |   |
|            |   |                         | Writing Intensive                    | ●         | 3     | CHM 411   | Instrumental Methods                           | ◆                              | 4     |   |
|            |   |                         | Restricted Elective                  | ◆         | 3     |   | Multicultural or International                 | ●                              | 3     |   |
|            |   |                         |                                      |           |       |   |  |                                |       |   |
|            |   | <b>TOTAL HOURS</b>      |                                      | <b>16</b> |       | <b>TOTAL HOURS</b>  |  | <b>14</b>                      |       |   |
|            |   | Summer Term (optional): |                                      |           |       |   |  |                                |       |   |

◆ Area of Emphasis

◆ Major Requirement

■ College Requirement

● General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.