

Chemistry



“Chemistry is called the ‘central science’ because of its central position in a fundamental understanding of diverse fields such as biology, medicine and pharmacy, physics, the environment, and geology. Our majors study the structure, properties, and reactivity of matter in both lecture and hands-on laboratories. Many of our students engage in undergraduate research where they work one-on-one with our faculty to apply course work to a real chemical problem. Graduating majors go on to pursue advanced degrees, gain employment in chemical industry and work in government laboratories.”

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New students considering a major in chemistry must take the [Chemistry Placement test](#). Based on the test recommendation, majors should select either Foundations of Chemistry (**CHEM 101**) or General Chemistry I (**CHEM 111**). Students should enroll in an appropriate mathematics course (e.g. **MATH 111, 121** or **MATH 122**) and/or physics (**PHYS 101** or **PHYS 105**). If a student’s Placement Test score is 32, 33, or 34, they may consider co-enrolling in CHEM111 and Quantitative Reasoning for the Sciences (**MATH120**). Note that CHEM 111 fulfills the first semester of the two- semester natural science sequence (CHEM 111-112) and also fulfills a requirement for majors in biology, geology and environmental science and minors in neuroscience and pre-conservation in fine art. Course descriptions for the mathematics and physics courses can be found in the information for the Departments of Mathematics and Physics, respectively. Please visit the [Chemistry Department’s website](#) for more information.

Below are some examples of 1st year schedules for a chemistry major. There are many variations on these schedules; the examples are meant show that there are several ways to reach the same goals.

Example 1: Fall semester chemistry major with a CHEM 111 placement test recommendation

| Course (credits) | Requirement(s) Met |
|--|----------------------|
| 1. FSEM 100X ^(a) – First Year Seminar (3) | FSEM |
| 2. CHEM 111 ^(b) – General Chemistry I with Lab (4) | Major, NSL |
| 3. MATH 121 ^(b) – Calculus I (4) | QREA |
| 4. PHYS 101 ^(b) – College Physics I (4) or PHYS 105 ^{(b),(c)*} – University Physics I (4) | NSL NSL, WI*, HN* |
| 5. SPAN 101 ^(b) – Beginning Spanish (3) | LANG |

Example 2: Fall semester chemistry major with pre-health interest

| Course (credits) | Requirement(s) Met |
|---|----------------------|
| 1. FSEM 100X ^(a) – First Year Seminar (3) | FSEM |
| 2. CHEM 111 ^(b) – General Chemistry I with Lab (4) | Major, NSL |
| 3. MATH 121 ^(b) – Calculus I (4) | QREA |
| 4. BIOL 121 ^(b) – Biological Concepts with Lab (4) or BIOL 125 ^{(c)*} – Phage Hunters I with Lab (4) | NSL NSL, WI*, HN* |
| 5. GERM 101 ^(b) – Beginning German (3) | LANG |

Example 3: Fall semester chemistry major with a CHEM 101 placement test recommendation

| Course (credits) | Requirement(s) Met |
|--|--------------------|
| 1. FSEM 100X ^(a) – First Year Seminar (3) | FSEM |
| 2. CHEM 101 – Foundations of Chemistry (3) | Elective |
| 3. MATH 111 – Precalculus (3) | QREA |
| 4. FREN 101 ^(b) – Beginning French (3) | LANG |
| 5. PHYD 412 - Intercollegiate Riding - Men & Women (1) | Elective |
| 6. THEA 112 – Introduction to Acting (3) | AL |

Example 4: Fall semester chemistry major with a placement test score falling between 32 and 34 and wishing to enroll in CHEM 111

| Course (credits) | Requirement(s) Met |
|---|--------------------|
| 1. FSEM 100X ^(a) – First Year Seminar (3) | FSEM |
| 2. CHEM 111 – General Chemistry I with Lab (4) | Major, NSL |
| 3. MATH 120 – Quantitative Reasoning for the Sciences (3) | QREA |
| 4. FREN 101 ^(b) – Beginning French (3) | LANG |
| 5. PHYD 412 - Intercollegiate Riding - Men & Women (1) | Elective |

Athletes for varsity sports must register for the 400-level course of the sport. Practice times for varsity sports vary, but, generally speaking, athletes should allow for time to get to and from practice on weekdays from 3 - 6 p.m. Please check with the coach for your sport to verify specific practice times.

For the **spring semester**, students might consider the following example schedules:

Example 1: Chemistry major with CHEM 111 completed during the first semester

| Course (credits) | Requirement(s) Met |
|---|----------------------|
| 1. CHEM 112 ^{(c)*} - General Chemistry II with Lab (4) | Major, NSL, HN* |
| 2. MATH 122 – Calculus II (4) | Elective |
| 3. PHYS 102 – College Physics II (4) or PHYS 106 ^{(c)*} – University Physics II (4) | NSL NSL, WI*, HN* |
| 4. SPAN 202 – Beginning Spanish (3) | LANG |

Example 2: Chemistry major with pre-health interest and CHEM 111 completed in the fall

| Course (credits) | Requirement(s) Met |
|---|----------------------|
| 1. CHEM 112 ^{(c)*} - General Chemistry II with Lab (4) | Major, NSL |
| 2. MATH 122 ^(b) – Calculus II (4) | Elective |
| 3. BIOL 132 – Organism, Function, and Diversity w/ Lab (4) or BIOL 126 ^{(c)*} – Phage Hunters II with Lab (4) | NSL NSL, WI*, HN* |
| 4. GERM 102 – Beginning German (3) | LANG |

Example 3: Chemistry major with CHEM 101 completed during the first semester

| Course (credits) | Requirement(s) Met |
|--|--------------------|
| 1. CHEM 111 – General Chemistry I with Lab (4) | Major, NSL |
| 2. MATH 121 ^(b) – Calculus I (4) | QREA |
| 3. FREN 102 – Beginning French (3) | LANG |
| 4. SOCG 105 – The Social World (3) | SS |
| 5. ARTH114A – History of Western Art (3) | AL or HUM |

(a) Honors Program students should take HIST 201/202HN or FSEM 100HN to fulfill required first-year Honors coursework.

(b) This particular course is in a discipline that allows students with demonstrated competence upon admission to UMW (such as AP/IB credit, dual enrollment, etc.) to begin courses at a higher level. Talk to Academic Services if you believe you should start at a higher level.

(c) BIOL 125, BIOL 126, CHEM 112, PHYS 105, and PHYS 106 are also available as honors (HN) designated options.

* Not all sections of a course may have the Writing Intensive (WI), Speaking Intensive (SI), or Honors (HN) attributes. These designations for a course are dependent on instructor and semester, and are listed in the Banner description for the semester in which you are registering.