**Four Year Graduation Plan – Courses & Critical Benchmarks:**
The following is a sample course of study. It is the Student's responsibility to ensure that all program requirements are met. This guide is not a substitute for academic advisement. For more information see the University Catalog at [umkc.edu/catalog](http://umkc.edu/catalog).

Your path to graduation may vary based on factors such as college credit you earned while in high school, transfer work from other institutions of higher learning, and placement in Mathematics. You are responsible for checking prerequisites to any courses. Critical Courses and minimum recommended grades (as noted below) provide feedback regarding major fit and help indicate likelihood of successful completion of chosen academic program and degree.

**Please Note:** Students who do not place into MATH 110 College Algebra or higher may have to complete preparatory math coursework, potentially adding 3 hours to the total hours required for the degree.

This major map is intended for Chemistry BA students interested in pursuing graduate study in a medical profession. The coursework below includes both the degree requirements for the Chemistry BA as well as recommended coursework to prepare for graduate study.

<table>
<thead>
<tr>
<th>First Math Course:</th>
<th>MATH 110 College Algebra OR MATH 120 Pre-Calculus</th>
<th>Foreign Language Requirement:</th>
<th>Yes</th>
<th>General Elective Hours:</th>
<th>38</th>
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<table>
<thead>
<tr>
<th>Critical Course</th>
<th>Course Subject, Number, &amp; Title and Academic Plan Benchmarks</th>
<th>Min. Rec. Grade</th>
<th>Credit Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold</strong> = UMKC General Education Core requirement</td>
<td><strong>Co-Requisite Enrollment Required</strong></td>
<td></td>
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</tbody>
</table>

### Fall Semester Year 1: 14-16 hours

- ****CHEM 211 + 211L General Chemistry I with Lab (Focus B)  
  
  C-  
  5

- MATH 110 College Algebra¹ (Focus Elective) OR MATH 120 Pre-Calculus¹ (Focus Elective) OR BIOLOGY 108 + 108L General Biology I with Lab (Focus Elective) OR BIOLOGY 109 + 109L General Biology II with Lab (Focus Elective)  
  
  C-  
  3-5

- **Anchor I Reasoning & Values** [Click for options]  
  
  3

- **DISC 100 Reasoning & Values** (Speech & Writing) [Click for options]  
  
  3

Complete 15 credit hours toward degree  
Earn minimum 2.00 term GPA

### Spring Semester Year 1: 14-16 hours

- ****CHEM 212R + 212LR General Chemistry II with Lab  
  
  C-  
  5

- MATH 210 Calculus I OR STAT 235 Elementary Statistics OR BIOLOGY 108 + 108L General Biology I with Lab OR BIOLOGY 109 + 109L General Biology II with Lab  
  
  C-  
  3-5

- **Anchor II Culture & Diversity** [Click for options]  
  
  3

- **DISC 200 Culture & Diversity** (Speech & Writing) [Click for options]  
  
  3

Complete 14+ credit hours toward degree  
Earn minimum 2.00 term GPA

### Summer Semester Year 1: 0-4 hours

- MATH 110 OR MATH 120 (if not previously completed)  
  
  C-  
  3-4

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¹Enrollment restricted. Must take ALEKS Math Placement Exam or show prerequisite requirement has been met prior to enrolling.
<table>
<thead>
<tr>
<th>Complete Math Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Anchor I &amp; DISC 100</td>
</tr>
<tr>
<td>Complete at least 30 total credit hours toward degree</td>
</tr>
<tr>
<td>Maintain a minimum 2.00 cumulative GPA</td>
</tr>
</tbody>
</table>

**Recommend completing MATH 110 or 120 over the summer if tested into MATH 100.**

### Fall Semester Year 2: 14 hours

- **CHEM 321 + 321L Organic Chemistry I with Lab**
  - 4
- Foreign Language Requirement\(^2\) (110 or higher) [Click for options]
  - 3
- PHYSICS 210 General Physics
  - 4
- Focus A Arts & Humanities [Click for options] OR MATH 210 Calculus I OR STAT 235 Elementary Statistics OR BIOL 202 Cell Biology
  - 3

**Complete 14 credit hours toward degree**
**Earn minimum 2.00 term GPA**

### Spring Semester Year 2: 17 hours

- **CHEM 322R + 322L Organic Chemistry II with Lab**
  - 4
- PHYSICS 220 General Physics II
  - 4
- Foreign Language Requirement (120 or higher) [Click for options]
  - 3
- CAS Social & Behavioral Sciences Requirement [Click for options] OR MATH 210 Calculus I OR STAT 235 Elementary Statistics OR BIOL 202 Cell Biology
  - 3
- General Elective
  - 3

**Complete 14 credit hours toward degree**
**Earn minimum 2.00 term GPA**

### Summer Semester Year 2: 0 hours

- Complete Anchor II & DISC 200
- Complete Foreign Language Requirement (120 or higher)
- Complete RooWriter Assessment
- Complete at least 60 credit hours toward degree
- Maintain minimum 2.00 cumulative GPA

**Students may use the summer to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.**

### Fall Semester Year 3: 15-17 hours

- CHEM 3XX/4XX Major Elective OR LS-BIOC 341 Basic Biochemistry OR LS-BIOC 365 Human Biochemistry I
  - 3
- Foreign Language Requirement (211 or higher) [Click for options]
  - 3
- **“Anchor III Civic & Community Engagement” [Click for options]**
  - 3
- **“DISC 300 Civic & Community Engagement” (Speech & Writing) [Click for options]**
  - 3
  - LS-ANATO 218 + 218L Introductory Anatomy with Lab OR General Elective
  - 3-5

**Complete 15 credit hours toward degree**
**Earn minimum 2.00 term GPA**

### Spring Semester Year 3: 14 hours

- CHEM 341WI Analytical Chemistry I
  - 4
- Focus C Human Values & Ethical Reasoning [Click for options]
  - 3
- CAS Social & Behavioral Sciences Requirement [Click for options] (Complete MO Constitution requirement\(^3\) if not met above)
  - 3

**\(^2\) The Foreign Language placement exam is highly recommended to ensure placement in the correct course level.**

**\(^3\) HISTORY 101, 102, & POL-SCI 210 fulfill both the Focus C & Missouri Constitution requirement.**
LS-PHYS 217 + 217L Human Physiology with Lab | 4

**Summer Semester Year 3: 0 hours**
- Complete Anchor III & DISC 300
- Complete Foreign Language Requirement (211 or higher)
- Complete at least 90 credit hours towards degree
- Maintain minimum 2.00 cumulative GPA

Students may use the summer to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.

**Fall Semester Year 4: 15 hours**
- CHEM 3XX/4XX Major Elective | 3
- Focus A Arts & Humanities [Click for options](#) (if not completed above) OR General Elective | 3
- CAS Arts & Humanities Requirement [Click for options](#) | 3
- CAS Social & Behavioral Sci [Click for options](#) (if not completed above) OR General Elective | 3
- General Elective (Recommend 300/400 level) | 3

Complete 15 credit hours toward degree
Earn minimum 2.00 term GPA

**Spring Semester Year 4: 12-15 hours**
- CAS Arts & Humanities Requirement [Click for options](#) | 3
- General Elective (Recommend 300/400 level) | 3
- General Elective (Recommend 300/400 level) | 3
- General Elective (Recommend 300/400 level) | 3
- General Elective (Only if needed to reach 120 hours) | 0-3

Earn minimum 2.00 term GPA

**Graduation Requirements Summary**

<table>
<thead>
<tr>
<th>Total Hours</th>
<th>Total Hours at UMKC</th>
<th>Upper Lvl Hrs in Major at UMKC</th>
<th>Upper (300 / 400) Level Hours</th>
<th>Major GPA</th>
<th>UMKC GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 minimum</td>
<td>30 minimum</td>
<td>12 minimum</td>
<td>36 minimum</td>
<td>2.00 minimum</td>
<td>2.00 minimum</td>
</tr>
</tbody>
</table>

**Other Information**

A minimum of 30 hours must be earned at the University of Missouri-Kansas City, regardless of the number and level of hours earned at another institution. Undergraduate degree-seeking students are required to earn credit in at least 36 hours of coursework numbered 300 and above at UMKC. In the case of transfer credit, the coursework must be numbered as junior-senior level work by the transferring institution. Community-college transfer coursework cannot count towards the 36-hour requirement.

**Non-course Requirements**
- RooWriter Assessment
- Major Field Exam
- ETS Proficiency Profile

**Policy**
The University reserves the right to make changes in courses and course schedules. Students are expected to maintain a quality of achievement significantly above minimum UMKC standards for degree work. Individual student progress will be monitored throughout the program. Satisfactory progress is required of all students for retention in the program. Students are expected to maintain academic standards, perform satisfactorily in courses, refrain from academic dishonesty, comply with the established University requirements, and refrain from unethical or unprofessional behavior.

UMKC

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behavior or behaviors that obstruct the training process or threaten the welfare of the student or others. Other circumstances involving student behavior will be addressed by the faculty on an individual basis.

**Advising Contact Information**

College of Arts & Sciences Student Services  
09 Scofield Hall (basement)  
[http://cas.umkc.edu/advising/default.asp](http://cas.umkc.edu/advising/default.asp)  
816-235-1148

**Career Opportunities**

UMKC Career Services – [career.umkc.edu](http://career.umkc.edu) | 816-235-1636 | 2nd Floor, Atterbury Student Success Center.  
O*Net OnLine – [OnetOnline.org](http://OnetOnline.org) Learn about careers related to your major, income potential, and more.