## 2021 - 2022 Major Map

**Chemistry, BA**

**School/College:** The College of Liberal Arts and Sciences  
**Location:** LACHMBA  
**and**  
**Secondary Education,**  
**BAE**

Mary Lou Fulton Teachers College  
**TESEDBAE**

### Term 1  0 - 14 Credit Hours  Critical course signified by [1](#)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 117: General Chemistry for Majors I (SQ) AND CHM 111: General Chemistry Laboratory for Majors I (SQ) OR CHM 113: General Chemistry I (SQ)</td>
<td>4</td>
<td>C</td>
<td>• ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students.</td>
</tr>
<tr>
<td>MAT 265: Calculus for Engineers I (MA) OR MAT 270: Calculus with Analytic Geometry I (MA)</td>
<td>3-4</td>
<td>C</td>
<td>• Select your Career Interest Communities and play me3@ASU.</td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>LIA 101: Student Success in The College of Liberal Arts and Sciences OR TEL 101: Professional Educator Series: The Student Experience</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEL 111: Exploration of Education (SB)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 14-15

### Term 2  14 - 31 Credit Hours  Critical course signified by [1](#)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 118: General Chemistry for Majors II (SQ) AND CHM 112: General Chemistry Laboratory for Majors II (SQ) OR CHM 116: General Chemistry II (SQ)</td>
<td>4</td>
<td>C</td>
<td>• ASU Language Placement: Only true beginners are eligible for 101-level courses. All other students are required to take a placement exam, regardless of prior credit earned.</td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td>• Connect with a Career Advisor by registering for a Handshake account.</td>
</tr>
<tr>
<td>MAT 266: Calculus for Engineers II (MA) OR MAT 271: Calculus with Analytic Geometry II (MA)</td>
<td>3-4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>TEL 208: Literacy in a Changing World (HU)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

**Second Language: Requirement satisfied through the following:**  
* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.  
* Complete ENG 101 OR ENG 105 OR ENG 107 course(s).  

**Term hours subtotal:** 17-18

### Term 3  31 - 49 Credit Hours  Critical course signified by [1](#)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>

**Term hours subtotal:**
CHM 233: General Organic Chemistry I 3 C
CHM 237: General Organic Chemistry Laboratory I 1 C
PHY 111: General Physics (SQ) 3 C
CHM 234: General Organic Chemistry II 3 C
CHM 238: General Organic Chemistry Laboratory II 1 C
PHY 114: General Physics Laboratory (SQ) 1 C
TEL 215: Introduction to Child and Adolescent Development (SB) 3 C

Second Language: Requirement satisfied through the following:
* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.

Complete First-Year Composition requirement.
Complete Mathematics (MA) requirement.

Term hours subtotal: 18

<table>
<thead>
<tr>
<th>Term 4 49 - 64 Credit Hours Critical course signified by ⚫</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫ PHY 112: General Physics (SQ) 3 C</td>
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<td></td>
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<tr>
<td>⚫ CHM 234: General Organic Chemistry II 3 C</td>
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<td></td>
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<tr>
<td>⚫ CHM 238: General Organic Chemistry Laboratory II 1 C</td>
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<tr>
<td>⚫ PHY 114: General Physics Laboratory (SQ) 1 C</td>
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<tr>
<td>⚫ TEL 203: Collaborating, Planning and Implementing Instruction in Diverse Contexts 3 C</td>
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</tbody>
</table>

Second Language: Requirement satisfied through the following:
* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.

Term hours subtotal: 15

<table>
<thead>
<tr>
<th>Term 5 64 - 78 Credit Hours Necessary course signified by ⭐</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>⭐ CHM 325: Analytical Chemistry 3 C</td>
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<tr>
<td>⭐ CHM 326: Advanced Analytical Chemistry Laboratory 1 C</td>
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<tr>
<td>⭐ SPE 222: Orientation to Education of Exceptional Children (SB &amp; C) 3 C</td>
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</tbody>
</table>

Second Language: Requirement satisfied through the following:
* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.

Milestone: Complete online Intent to Progress form (meet with advisor).
Milestone: Submit Identity Verified Print (IVP) DPS fingerprint clearance card.
Minimum 2.50 GPA ASU Cumulative.

TEL 311: Instruction and Management in the Inclusive Classroom 3 C

Term hours subtotal: 14

<table>
<thead>
<tr>
<th>Term 6 78 - 92 Credit Hours Necessary course signified by ⭐</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>⭐ CHM 341: Elementary Physical Chemistry 3 C</td>
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<tr>
<td>⭐ CHM 480: Methods of Teaching Chemistry 3 C</td>
<td></td>
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<tr>
<td>⭐ SED 397: Clinical Experience II 1 C</td>
<td></td>
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<tr>
<td>⭐ BLE 407: SEI for Secondary Students (L) 3 C</td>
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<tr>
<td>⭐ CHM 343: Elementary Physical Chemistry Laboratory 1 C</td>
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<td></td>
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<tr>
<td>⭐ SPE 417: Inclusion Practices at the Secondary Level 3 C</td>
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</tbody>
</table>

During your clinical experience internship, you will work alongside an intern mentor teacher in a 6-12th grade classroom. You will be required to complete 75 hours over 12 weeks. Reliable transportation is important.
Use Handshake to research employment opportunities.

• Discuss study abroad opportunities with a School of Molecular Sciences advisor or an International Coordinator.

• Teachers College Requirement: Apply for an Identity Verified Print (IVP) DPS fingerprint clearance card.

• Build your professional connections -- join the ASU Mentor Network.

• Meet with Teachers College advisor to complete paperwork needed to start education program. Call 480.965.5555 to schedule appointment by recommended deadline of September 15.

• CHM 325 and CHM 326 are only offered in the Fall semester.

• Create a first draft resume.

Meet with Teachers College advisor to complete paperwork needed to start education program. Call 480.965.5555 to schedule appointment by recommended deadline of September 15.

• CHM 325 and CHM 326 are only offered in the Fall semester.

• Create a first draft resume.
Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).

Minimum 2.50 GPA ASU Cumulative.

Term hours subtotal: 14

<table>
<thead>
<tr>
<th>Term 7</th>
<th>92 - 108 Credit Hours Necessary course signified by ⭐</th>
<th>Hours</th>
<th>Minimum Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 453: Inorganic Chemistry</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>SED 482: Science Teaching Methods for Secondary Schools</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>SED 496: Clinical Experience III</td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>RDG 323: Literacy Processes in Content Areas</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>SED 322: Classroom Leadership in Secondary Schools (L)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Humanities, Arts and Design (HU) AND Global Awareness (G) AND Historical Awareness (H)</td>
<td>3</td>
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</tr>
</tbody>
</table>

Minimum 2.50 GPA ASU Cumulative.

Term hours subtotal: 16

During your clinical experience internship, you will work alongside an intern mentor teacher in a 6-12th grade classroom. You will be required to complete 75 hours over 12 weeks. Reliable transportation is important.

Apply for full-time career opportunities.

Students seeking teacher certification must pass state educator exams. Please speak with your education advisor to plan appropriately.

CHM 453 is only offered in the Fall semester.

<table>
<thead>
<tr>
<th>Term 8</th>
<th>108 - 120 Credit Hours Necessary course signified by ⭐</th>
<th>Hours</th>
<th>Minimum Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>SED 478: Student Teaching: Secondary Education (Grades 6-12) OR Upper Division Non-Teacher Certification Track</td>
<td>12</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.50 GPA ASU Cumulative.

Term hours subtotal: 12

If you choose not to participate in student teaching, select 12 hours from the non-certification track group below. Without student teaching, you will not be qualified for Arizona Department of Education Secondary Education Certification, but you will still earn a degree in Secondary Education. You may be eligible for an Arizona Subject Matter Expert credential. Please consult with your education advisor and the Arizona Department of Education for clarification. We highly encourage all students to complete student teaching.
• First-Year Composition: All students are placed in ENG 101 unless submission of SAT, ACT, Accuplacer, IELTS, or TOEFL score, or college-level transfer credit or test credit equivalent to ASU's first-year composition course(s), determines otherwise. Students on Polytechnic, Downtown Phoenix and West Campuses are encouraged to complete the Directed Self-Placement survey to choose the first-year composition option they believe best suits their needs. Visit: https://cisa.asu.edu/DSP
• Mathematics Placement Assessment score determines placement in first mathematics course.

• Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

**General University Requirements Legend**

General Studies Core Requirements:

• Literacy and Critical Inquiry (L)
• Mathematical Studies (MA)
• Computer/Statistics/Quantitative Applications (CS)
• Humanities, Arts and Design (HU)
• Social-Behavioral Sciences (SB)
• Natural Science - Quantitative (SQ)
• Natural Science - General (SG)

**General Studies Awareness Requirements:**

• Cultural Diversity in the U.S. (C)
• Global Awareness (G)
• Historical Awareness (H)

**First-Year Composition**

General Studies designations listed on the major map are current for the 2021 - 2022 academic year.