Chemistry (CH25)
Major Requirements for Students who Matriculated FALL 2017 and After

Name: __________________________     PID: ________________    YR: FR/ SO/ JR/ SR

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Lower Division Requirements:

GENERAL/ORGANIC CHEMISTRY
- CHEM 6A
- CHEM 6B
- CHEM 6C
- CHEM 7L or 7LM
- CHEM 40A
- CHEM 40B
- CHEM 40C
- CHEM 43A or 43AM

MATH
- MATH 20A
- MATH 20B
- MATH 20C
- MATH 20D

PHYSICS
- PHYS 2A
- PHYS 2B
- PHYS 2C or 2D
- PHYS 2CL*, 2BL or DL

*Recommended. PHYS 2CL is a prerequisite for CHEM 105A.

Upper Division Major Requirements:

PHYSICAL
- CHEM 130
- CHEM 131
- CHEM 132

INORGANIC
- CHEM 120A
- CHEM 120B

BIOCHEM
- CHEM 114A

LAB ELECTIVES
Select 2 of the following Labs*:
- CHEM 100B, 105B, 108, 109, 123, 143C, 143D
  - CHEM ______
  - CHEM ______

*8 units of CHEM 199 can be petitioned to fulfill one lab elective

LABS
- CHEM 100A
- CHEM 143B

ELECTIVES
Select 3 additional 4-unit Upper Division CHEM electives**
- CHEM ______
- CHEM ______
- CHEM ______

**4 units of CHEM 199 can be petitioned to fulfill one course elective
## Lower Division Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 6A</td>
<td></td>
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<td>CHEM 6B</td>
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<td>CHEM 6C</td>
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<td>CHEM 7L or 7LM</td>
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<tr>
<td>CHEM 6A</td>
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<td>CHEM 6B</td>
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<td>CHEM 6C</td>
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<tr>
<td>CHEM 7L or 7LM</td>
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</table>

**Math Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>MATH 20A</td>
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<td>MATH 20B</td>
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<td>MATH 20C</td>
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<td>MATH 20D</td>
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**Physics Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>PHYS 2A</td>
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<tr>
<td>PHYS 2B</td>
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<tr>
<td>PHYS 2C or 2D</td>
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<tr>
<td>PHYS 2CL*, 2BL or 2DL</td>
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</tbody>
</table>

*Recommended. PHYS 2CL is a prerequisite for CHEM 105A.

## Upper Division Major Requirements:

### Physical

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM 126</td>
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<tr>
<td>CHEM 127</td>
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</tbody>
</table>

**Chemical electives:** CHEM 130, 131 and 132 acceptable

### Inorganic

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM 120A</td>
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</table>

**Biochemistry electives:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM 114A</td>
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<tr>
<td>CHEM 114B</td>
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<tr>
<td>CHEM 114C</td>
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</table>

### Labs

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM 100A</td>
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<tr>
<td>CHEM 143B</td>
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<tr>
<td>CHEM 105A</td>
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</tbody>
</table>

Select 1 of the following: CHEM 108 or 109

**Electives**

Select 2 of the following Biochemistry electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>112, 114D, 116, 118</td>
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<tr>
<td>125, 137, 139, 163, 167, 168, 221, 239, 207</td>
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</tbody>
</table>

*Enrollment with instructor consent.

Select 1 additional UD 4-unit Chemistry course**

**4 units of CHEM 199 can be petitioned to fulfill this elective.
Molecular Synthesis (CH36)
Major Requirements for Students who Matriculated FALL 2017 and After

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Lower Division Requirements

**MATH**
- MATH 20A
- MATH 20B
- MATH 20C
- MATH 20D

**PHYSICS**
- PHYS 2A
- PHYS 2B
- PHYS 2C or 2D
- PHYS 2CL*, 2BL or 2DL

*Recommended. PHYS 2CL is a prerequisite for CHEM 105A.

**GENERAL/ORGANIC CHEMISTRY**
- CHEM 6A  
- CHEM 6B  
- CHEM 6C  
- CHEM 7L or 7LM  
- CHEM 40A  
- CHEM 40B  
- CHEM 40C  
- CHEM 43A or 43AM

**Upper Division Major Requirements:**

**PHYSICAL**
- CHEM 126
- CHEM 127
  - CHEM 130, 131 and 132 acceptable

**INORGANIC**
- CHEM 120A
- CHEM 120B

**BIOCHEM**
- CHEM 114A

**LAB**
- CHEM 100A
- CHEM 143B
- CHEM 105A
- CHEM 123
  - Select 1: CHEM 143C and 143D
- CHEM __________

**SYNTHETIC METHODS**
- CHEM 152

**BIOINORGANIC or BIOORGANIC**
- Choose 1: CHEM 125 or 157
- CHEM __________

**STRUCTURAL or MECHANISTIC**
- Select 1: CHEM 154 or 156
- CHEM __________

**ADDITIONAL ELECTIVE**
- Choose 1: CHEM 114B, 114C, 155, 185 or 199*
- CHEM __________

*4 units of CHEM 199 can be petitioned to fulfill this elective.
Environmental Chemistry (CH34)
Major Requirements for Students who Matriculated FALL 2017 and After

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Lower Division Requirements

**GENERAL/ORGANIC CHEMISTRY**
- CHEM 6A
- CHEM 6B
- CHEM 6C or 7L
- CHEM 4A or 43A

**MATH**
- MATH 20A
- MATH 20B
- MATH 20C
- MATH 20D

**PHYSICS**
- PHYS 2A
- PHYS 2B
- PHYS 2C or 2D
- PHYS 2CL*, 2BL or 2DL

*Recommended. PHYS 2CL is a prerequisite for CHEM 105A.

Upper Division Major Requirements:

**PHYSICAL**
- CHEM 130
- CHEM 131
- CHEM 132
- CHEM 126 & 127 acceptable

**ENVIRONMENTAL**
- CHEM 171
- CHEM 172

**ATMOSPHERIC**
- CHEM 173

**MARINE**
- CHEM 174

**ELECTIVES**
Any four with at least two upper division among*: CHEM 114A, 120A, 40C, 143C, 166, BILD 1, 2, 3, BIEB 121, 140, 176, ESYS 101, SIO 50, 101, 102, 103, 144, MATH 183
- CHEM ______
- CHEM ______
- CHEM ______
- CHEM ______

**LABS**
- CHEM 100A
- CHEM 100B
- CHEM 105A

**ACS CERTIFICATION**
To add ACS certification: replace the four electives listed previously with the following: CHEM 40C, 114A, 120A, and two labs chosen from CHEM 143B, 143C, 143D, 108, 109, 123, and 105B.

*4 units of CHEM 199 can be petitioned to fulfill one elective

** ACS Certification is optional
Pharmacological Chemistry (CH35)

Major Requirements for Students who Matriculated FALL 2017 and After

Name: __________________________     PID: ________________    YR: FR/ SO/ JR/ SR

<table>
<thead>
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**GENERAL/ORGANIC CHEMISTRY**
- CHEM 6A
- CHEM 6B
- CHEM 6C
- CHEM 7L or 7LM
- CHEM 40A
- CHEM 40B
- CHEM 40C
- CHEM 43A or 43AM

**MATH**
- MATH 20A
- MATH 20B
- MATH 20C
- MATH 20D

**PHYSICS**
- PHYS 2A
- PHYS 2B
- PHYS 2C or 2D
- PHYS 2CL or 2DL

**BIOLOGY**
- BILD 1
- BILD 2

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**Upper Division Major Requirements:**

**PHYSICAL**
- CHEM 126
- CHEM 127
  - CHEM 130, 131 and 132 acceptable

**BIOCHEMISTRY**
- CHEM 114A
- CHEM 114B
- CHEM 114C

**PHARMACOLOGY & TOXICOLOGY**
- CHEM 118

**MEDICINAL**
- CHEM 167

**DRUG SYNTHESIS & DESIGN**
- CHEM 168

**ELECTIVE**
- Choose 1: UD 4-Unit UD or Graduate Level course offered by the Department of Chemistry and Biochemistry
- CHEM ________

**LABS**
- CHEM 100A
- CHEM 143B
- CHEM 108, 109 or 143C

**ACS CERTIFICATION**
- To add ACS certification: replace the four electives listed previously with the following:
  - 120A, 105A and one lab selected from 100B, 105B, 123, 108, 109, or 143C (if not already taken for Biochemistry lab)

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*4 units of CHEM 199 can be petitioned to fulfill one elective

** ACS Certification is optional