MCDB & MIMG
New Student Orientation

Session 101
July 21, 2020
Advisor Information

**Molecular, Cell, & Developmental Biology**
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**Microbiology, Immunology, & Molecular Genetics**
Joy Ahn
Email: undergrad@microbio.ucla.edu
Website: www.mimg.ucla.edu
Life Science Core Curriculum

- Life Sciences
- Chemistry
- Mathematics
- Physics
## Life Sciences (All Courses required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>LS 7A – Cell &amp; Molecular Biology (5)</td>
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<tr>
<td>LS 7B – Genetics, Evolution &amp; Ecology (5)</td>
<td></td>
<td>7A</td>
</tr>
<tr>
<td>LS 7C – Physiology &amp; Human Biology (5)</td>
<td></td>
<td>7B</td>
</tr>
<tr>
<td>LS 23L – Intro to Laboratory and Scientific Methodology (3)</td>
<td></td>
<td>7B</td>
</tr>
<tr>
<td>LIFE SCIENCE SERIES</td>
<td>PHYSICAL SCIENCE SERIES</td>
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<tr>
<td><strong>14A(E)</strong> – General Chemistry for Life Scientists I (Enhanced) (4)</td>
<td><strong>20A(H)</strong> - Chemical Structure (4) (Honors)</td>
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<tr>
<td>Co-requisite: LS 30A or MATH 3A or 31A, or place into MATH 3A/31A by taking the Math Diagnostic Test</td>
<td>Prep: Min 1 yr high school (HS) chemistry, 3.5 yrs HS math, (recommended) HS physics</td>
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<tr>
<td><strong>14B(E)</strong> - General Chemistry for Life Scientists II (Enhanced) (4)</td>
<td>Co-req: MATH 31A</td>
<td></td>
</tr>
<tr>
<td>Prerequisite: CHEM 14A or 20A (grade of C- or better); Co-Req: LS 30B or MATH 3B or 31B (grade of C- or better)</td>
<td><strong>20B(H)</strong> - Chemical Energetics and Change (Honors) (4)</td>
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<tr>
<td><strong>14BL</strong> - General and Organic Chemistry Lab I (3)</td>
<td>Prerequisites: CHEM 20A(H) and MATH 31A</td>
<td></td>
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<tr>
<td>Prereq: CHEM 14A or 20A(H) (grade C- or better)</td>
<td>(grades of C- or better)</td>
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<tr>
<td>Pre- or Co-requisite: CHEM 14B</td>
<td><strong>20L</strong> - General Chemistry Laboratory (3)</td>
<td></td>
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<tr>
<td><strong>14C</strong> – Structure of Organic Molecules (4)</td>
<td>Prerequisite: CHEM 14A or 20A (grade of C- or better)</td>
<td></td>
</tr>
<tr>
<td>Prerequisite: CHEM 14B (grade of C- or better)</td>
<td>Pre- or Co-requisite: CHEM 14B or 20B</td>
<td></td>
</tr>
<tr>
<td><strong>14D</strong> – Organic Reactions &amp; Pharmaceuticals (4)</td>
<td><strong>30A</strong> – Organic Chemistry I: Structure &amp; Reactivity (4)</td>
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<tr>
<td>Prerequisite: CHEM 14C (grade of C- or better)</td>
<td>Prerequisite: CHEM 20B</td>
<td></td>
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<tr>
<td><strong>30AL</strong> - General Chemistry Laboratory II (4)</td>
<td><strong>30B</strong> – Organic Chem II: Reactivity, Synthesis, &amp; Spectroscopy (4)</td>
<td></td>
</tr>
<tr>
<td>Prerequisites: CHEM 20B(H), 20L, 30A(H)</td>
<td>Prerequisite: CHEM 30A (grade of C- or better)</td>
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<tr>
<td>(grades of C- or better)</td>
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</tbody>
</table>
# Chemistry

## ADDITIONAL Chemistry (Not required for the major)

These courses are recommended for students planning to attend professional school.

<table>
<thead>
<tr>
<th>LIFE SCIENCE SERIES</th>
<th>PHYSICAL SCIENCE SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>14CL - General &amp; Organic Chemistry Lab II (4) Prerequisites: CHEM 14B, 14BL or 20B, 20L (grades of C- or better) Pre- or Co-requisite: CHEM 14C</td>
<td>30BL - Organic Chemistry Laboratory I (3) Prerequisites: CHEM 30A(H), 30AL, 30B (grades C- or better)</td>
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<tr>
<td></td>
<td>30C - Organic Chemistry III: Reactivity and Synthesis, and Biomolecules (4) Prerequisite: CHEM 30B (grade C- or better)</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTE:** After Completing CHEM 20A, students can move to the 14 Series starting with 14B, or after taking CHEM 20A, 20B, 20L may take Chem 14C, 14CL, 14D. Students who wish to switch from the 14 series to the 20/30 series after taking CHEM 14A, 14B, and 14BL, can take CHEM 30A, 30AL, 30B.
Mathematics

<table>
<thead>
<tr>
<th>Mathematics for Life Sciences (recommended)</th>
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<tbody>
<tr>
<td>Life Science 30A – Mathematics for Life Scientists (4)</td>
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<tr>
<td>Life Science 30B - Mathematics for Life Scientists (4)</td>
</tr>
<tr>
<td>Prerequisite: LS 30A</td>
</tr>
<tr>
<td>Life Science 40 – Statistics of Biological Systems (5)</td>
</tr>
<tr>
<td>Prerequisite: LS 30A</td>
</tr>
<tr>
<td>OR</td>
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<tr>
<td>Stats 13 – Introduction to Statistical Methods for Life and Health Sciences (5)</td>
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</tbody>
</table>

Note: The math diagnostic test is NOT required to start this series.
## Mathematics (Offered by the Math Department)

### LIFE SCIENCE SERIES
- **MATH 3A** – Calculus for Life Science Students (4)  
  Preparation: Math Diagnostic Test Score of 48 or better or Course 1 (grade of C- or better)
- **MATH 3B** – Calculus for Life Science Students (4)  
  Prerequisite: Math 3A or 31A (grade C- or better)
- **MATH 3C** – Ordinary Differential Equations with Linear Algebra for Life Science Students (4)  
  Prerequisite: Math 3B or 31B (grade C- or better)

### PHYSICAL SCIENCE SERIES
- **MATH 31A(H)(L)** – Differential & Integral Calculus (Honors) (Laboratory) (4)  
  Preparation: Math Diagnostic Test Score of 80% or better (31A), 60%-80% (31AL) or Course 1 (grade of C- or better)
- **MATH 31B(H)** – Integration & Infinite Series (Honors) (4)  
  Prerequisite: MATH 31A (grade of C- or better)
- **MATH 32A(H)** – Calculus of Several Variables (Honors) (4)  
  Prerequisite: MATH 31A (grade of C- or better)

**STATS 13**: Required for MIMG majors ONLY

**NOTE**: AP Calculus may give you credit for either 31A or 31A and 31B – see below.

<table>
<thead>
<tr>
<th>Score</th>
<th>AB Exam</th>
<th>BC Exam</th>
</tr>
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</table>
| 5     | Credit for MATH 31A  
- Enroll in Math 3B or 31B | Credit for MATH 31A, 31B  
- Enroll in Math 3C or 32A |
| 4     | No credit for Math 3 or 31 series | Credit for Math 31A  
- Enroll in Math 3B or 31B |
## Math Diagnostic Test

<table>
<thead>
<tr>
<th>Score</th>
<th>Placement</th>
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</thead>
<tbody>
<tr>
<td>80%+</td>
<td>MATH 31A / MATH 3A</td>
</tr>
<tr>
<td>60-80%</td>
<td>MATH 31AL</td>
</tr>
<tr>
<td>30%+</td>
<td>MATH 1</td>
</tr>
</tbody>
</table>

Remember that the Math for Life Science series (LS 30A, 30B, STATS 13/LS40) does not require the Math Diagnostic Test.
<table>
<thead>
<tr>
<th>LIFE SCIENCE SERIES</th>
<th>PHYSICAL SCIENCE SERIES</th>
</tr>
</thead>
</table>
| **5A** – Physics for Life Science Majors: Mechanics and Energy (5)  
Prerequisite: MATH 3A, 3B, 3C, or MATH 31A, 31B, 32A or LS 30A, 30B | **1A(H)** - Physics for Scientists and Engineers: Mechanics (Honors) (5)  
Prerequisites: MATH 31A and 31B  
Pre- or Co-requisite: MATH 32A |
| **5B** – Physics for Life Science Majors: Thermodynamics, Fluids, Waves, Light and Optics (5)  
Prerequisite: PHYSICS 5A | **1B(H)** - Physics for Scientists and Engineers: Oscillations, Waves, Electric and Magnetic Fields (Honors) (5)  
Prereq: PHYSICS 1A, MATH 31B, 32A  
Pre- or Co-requisite: MATH 32B |
| **5C** – Physics for Life Science Majors: Electricity, Magnetism, and Modern Physics (5)  
Prerequisite: PHYSICS 5A | **1C(H)** - Physics for Scientists and Engineers: Electrodynamics, Optics, and Special Relativity (Honors) (5)  
Prereq: PHYSICS 1A, 1B, MATH 32A, 32B  
Pre- or Co-requisite: MATH 33A |

**Labs:**  
Each course in the 5 series includes both lecture and laboratory.

**Labs:**  
**4AL** - Physics Lab for Scientists and Engineers: Mechanics (2)  
Prerequisite: PHYSICS 1A(H)  
Co-Req: PHYSICS 1B(H)  
**4BL** - Physics Lab for Scientists and Engineers: Electricity and Magnetism (2)  
Prerequisite: PHYSICS 1A(H), 1B(H)  
Co-Requisite: PHYSICS 1C
Tips for New Students

- The Quarter System
- Course Load
- Prerequisites and Sequence of Courses
- When to Seek Advice
- College vs. Departmental Advisors
- Professors’ Office Hours
- Current Contact Information
Scheduling Tips

First Quarter Recommendations:

- No more than 2 science classes
- Any combination of Life Science, Chemistry, and Math
  - CHEM 14A and LIFESCI 30A
  - LIFESCI 7A and LIFESCI 30A
- 2 science classes + 1 non-science class (ex: ENG COMP 3, GE)
Medical School Requirements

- 3 quarters of college **English** (AP does not apply)
- 3 quarters of college **math** (AP does not apply) including Statistics
- 1 year of **biology with lab** (LIFESCI 7A, 7B, 7C, 23L)
- CHEM 14 series or CHEM 20/30 series + CHEM 153A fulfills the **chemistry with lab** requirement (AP does not apply)
- **Physics** is covered by the major
- **Spanish** is highly recommended
Stay informed about all things Pre-Health at UCLA

prehealth.ucla.edu
information, services, and resources

PreHealthUCLA
upcoming events and opportunities
Getting Involved in Research

- Biomedical Research Minor
  - Introductory course required to apply - BMD RES 5HA, BMD RES 10H, HNRS 70A
- Undergraduate Research Center
- Consult with your MCDB or MIMG advisor for major-specific information
Join our Listserv

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To subscribe to MIMG: Send an email to MIMG+subscribe@lists.ucla.edu
Questions?

Additional questions? Send us an email!

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