WELCOME!
Some Key People:

Department Chair:
Dr. Alison McCurdy
- [amccurd@calstatela.edu](mailto:amccurd@calstatela.edu)
- 323-343-2300, BS 336 (Department office)

Department Office Staff:
Ms. Maribel Estrada
- 323-343-2300, BS 336 (Department office)
Some Key People:

Stockroom Manager:
Mr. Bill Wimberley
• 323-343-2345, ASCB 251

Manager of Instructional Labs:
Dr. Errol Mathias
• 323-343-5648, ASCL 132

Labs: Goggles, notebook, Breakage card from the cashier!
Some Key People:

Dean of the College of Natural and Social Sciences:
Dr. Pamela Scott-Johnson
• 323-343-2000, ACSB 223

Provost and Vice President for Academic Affairs:
Dr. Lynn Mahoney

President of Cal State LA:
Dr. William A. Covino
Some Key Places:

Department Office – 3rd floor
Biological Sciences
BS 336

Faculty Offices, Teaching labs, research labs

Annenberg Science Complex:
- La Kretz Hall or ASCL (27A)
- “Wing B” or ASCB (27B)
Some Key Websites:

Department:
http://www.calstatela.edu/dept/chem

NSS Advisement Center:
http://www.calstatela.edu/nssadvising

E-catalog, myCSULA
Some general advice…..

- Talk to your professors. *Whether or not* you need help in a class!
- You need to think about your GPA (for the next stage in your career), so make sure the **balance of school and other commitments allows you to focus on academic success**.
- Develop your peer network – start now!

In groups of 3-4, introduce yourselves, your major, your career goals, and tell everyone something surprising about you.
Some general advice…..

Get involved with extracurricular activities such as:
• Chemistry and Biochemistry Club
• Pre-Pharmacy Club

Depending on your career goals, there are other experiences outside the classroom:

• Volunteering at a hospital
• Getting involved in research

There is a Health Careers Advisement Office
http://www.calstatela.edu/healthcareers
KH D 1044
healthcareers@calstatela.edu
323-343-5284
Undergraduate Degree Programs

Students graduate with:

1. **Knowledge of the Field** - Theoretical and Practical
   - Chemistry and Biochemistry - the *molecular sciences*
   - New discoveries all the time
     - New molecules
     - New methods
     - Answers to problems in environment, health, etc.

2. **Problem-solving Skills**
3. **Experience with Teamwork**
4. **Effective Communication Skills**
Undergraduate Degree Programs
B.S. Chemistry or B. S. Biochemistry

• Suitable for students seeking:
  • Entry-level jobs as chemists
  • Entry into a graduate research program (M.S., Ph.D., etc)
  • Entry into health professions schools
  • See Department web page – careers tab

• Laboratory-intensive
• Honors Program available
• *Calculus-based physics*
• General Chemistry is the foundation; degree then focuses on subdisciplines: Analytical, Biochemistry, Inorganic, Organic, Physical

• Opportunities for Research Experiences!!
Planning for timely graduation

• Know the Degree Requirements
  • Know your catalog year (GE vs major)
  • Degree Planner (General Catalog)
  • ORDER MATTERS! Schematic of pre-requisites in major (handout); Roadmaps (handout)
    • You must finish GChem, MATH 2120 and PHYS 2200 before starting physical chemistry (CHEM 4420-thermo)
    • You must finish MATH 2120 and PHYS 2200 before starting physical chemistry (CHEM 4410-quantum)
  • Sample 2-year plans (handout)
Planning for timely graduation

• Some items to highlight in our requirements
  • If you took and passed a year of organic chemistry and lab, you must still take CHEM 3200 (Ochem II Lecture)
  • If you took and passed a year of organic chemistry and lab elsewhere, you may take CHEM 4300 (Introduction to Biochemistry) or CHEM 4310 (Biochemistry I lecture)
Planning for timely graduation

• Some items to highlight in our requirements
  • CHEM 2300 (Biomolecules) is a pre-requisite for CHEM 4310 (Biochemistry I lecture)
  • CHEM 3100 (Writing for Chemists) is a pre-requisite for CHEM 4311 (Biochemistry I lab) and for CHEM 4431 (Physical Chemistry Lab)
  • CHEM 4890 (Molecular Science Capstone) counts as Upper division GE Block B
Planning for timely graduation

- Some items to highlight in our requirements
  - While BS BIOL/MICR majors require PHYS 1100+1200, BS CHEM/BIOC majors require PHYS 2100+2200. We will not accept PHYS 1100+1200
  - While BS BIOL/MICR majors take MATH 2040+2050, BS CHEM/BIOC majors require MATH 2110+2120.
For BS Biochemistry majors, you do not have to take any lower division GE courses in Biological Sciences, Physical Sciences, or Quantitative Reasoning (your major courses “double count” for your major and for GE!)

For BS Chemistry majors, you do not have to take any lower division GE courses in Physical Sciences or Quantitative Reasoning (your major courses “double count” for your major and for GE!)
Planning for timely graduation

• What to take first
  • Start taking math right away!
  • Start your majors classes right away! (people unfamiliar with our degrees advise you to complete your GE first, but only do that if no other major classes are available)
  • Course offerings: some courses are offered >once a year, some only once, and some every other year! [This list is available on the department web page!]
Degree planner in catalog. Use it to check off requirements as you go…. (BUT: lists don’t tell you what order you need to do them in!)

### Biochemistry, B.S.

The Bachelor of Science degree in Biochemistry is designed to fill the needs of those who plan to complete their formal education with the bachelor's degree and obtain positions in scientific and industrial laboratories, attend health professional schools, or do graduate study in biochemistry or molecular life sciences.

The total number of units required for the Bachelor of Science degree in Biochemistry is 120 units, of which 84 units are in the major. Consult with an advisor for the specific number of units required in all areas of the degree including GE and free electives.

#### Requirements for the Major (84 units)

**Lower Division Required Courses (46 units)**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits:</th>
<th>Term Taken</th>
<th>Grade</th>
<th>Gen Ed</th>
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<tbody>
<tr>
<td>CHEM 1100 - General Chemistry I</td>
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<tr>
<td>CHEM 1110 - General Chemistry II</td>
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<tr>
<td>CHEM 2300 - Introduction to Biomolecules</td>
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<td>CHEM 2300 - Organic Chemistry I</td>
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<td>CHEM 2311T - Organic Chemistry Laboratory I</td>
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<td>CHEM 2311T - Organic Chemistry Laboratory II</td>
<td>(1)</td>
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<tr>
<td>BIOL 1100 - Principles of Biology I</td>
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<td>BIOL 1200 - Principles of Biology II</td>
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<td>MATH 2110 - Calculus I</td>
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<td>MATH 2130 - Calculus II</td>
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<tr>
<td>PHYS 2100 - General Physics I: Mechanics and Thermodynamics</td>
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<tr>
<td>PHYS 2200 - General Physics II, Electromagnetism and Optics</td>
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**Upper Division Required Courses (31 units)**

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<tr>
<th>Course Name</th>
<th>Credits:</th>
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<tr>
<td>CHEM 3000 - Quantitative Analysis</td>
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<td>CHEM 3300 - Organic Chemistry II</td>
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<tr>
<td>CHEM 3600 - Inorganic Chemistry</td>
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<tr>
<td>CHEM 3100 - Writing for Chemists</td>
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<tr>
<td>CHEM 4420 - Physical Chemistry: Thermodynamics</td>
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<tr>
<td>CHEM 4310 - Biochemistry I</td>
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<tr>
<td>CHEM 4320 - Biochemistry II</td>
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<td>CHEM 4311T - Biochemistry Laboratory II</td>
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<tr>
<td>CHEM 4890 - Molecular Science Capstone</td>
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</table>

**Upper Division Electives (7 units)**

Students must take a minimum of 2 units of coursework listed under Chemistry and a minimum of 2 units of coursework listed under Biology and Microbiology totaling 7 units to meet the major electives requirement for the Biochemistry B.S. program. Students may apply a maximum of 1 unit of CHEM 4990 to fulfill the elective requirement.

Students that seek to earn a BS Biochemistry degree that is approved by the American Chemical Society can do so by choosing as an elective an additional upper division chemistry course that includes at least one unit of laboratory, or one unit of directed laboratory research (CHEM 4990).

*Please note that some of the below electives have prerequisites. Students should consult their advisor.*
This scheme shows the order of classes – but adapt it to YOUR situation (what math are you starting in, etc.)

ILLUSTRATION OF WHICH COURSES ARE PRE/CO-REQUISITES FOR OTHERS: BS BIOCHEMISTRY SEMESTERS

Math 1040 → Math 2110 → Math 2120 → Phys 2100 → Phys 2200
Biol 1100 Biology I → Biol 1200 Biology II → Chem 2300 Biomolecules
Chem 3500 Quant → Chem 4320 Biochem II
Chem 4420 Pchem Thermo
Chem 5600 Inorg

+ 7 units upper division electives distributed between Chem and Biology

Solid arrows are pre-requisites (MUST be completed with a C- or better before taking the course)
Dashed arrows are co- or pre-requisites (MUST be completed with a C- or better before taking the course OR during the same term as the course)

* Satisfactory completion of GWAR is a pre-requisite
*** Also requires passing grade on the GWAR, completion of Blocks A and B4, an additional course from Block B, and at least one course from each of blocks C and D.

Remember that if you are a BS Biochemistry major, you should NOT take lower division GE Biological Sciences; lower division GE Physical Sciences, or lower division GE quantitative reasoning because your major coursework satisfies these requirements. CHEM 4890 satisfies Upper division GE Block B.

Revised 7/17
What should **you** take next?

1. Check off all you have already taken. Example: you are calculus ready and you have taken Gen CHEM I
What should you take next?
1. Check off all you have already taken. Example: you are calculus ready and you have taken Gen CHEM I
What should **you** take next?

1. Check off all you have already taken. Example: you are calculus ready and you have taken Gen CHEM I

2. Follow the arrows from these and circle all courses you are able to take.
What should **you** take next?

1. Check off all you have already taken. Example: you are calculus ready and you have taken Gen CHEM I

2. Follow the arrows from these and circle all courses you are able to take. In this example they are Calculus I, Biology 1100, and Gen Chem II. (And any missing GE). Prioritize classes that are pre-requisites to other classes.
Chemistry, B.S.

The Bachelor of Science degree in Chemistry is approved by the American Chemical Society. It is designed to fit the needs of those who either plan to complete their formal education with the bachelor’s degree and obtain positions in scientific or industrial laboratories or do graduate study in chemistry.

The total number of units required for the Bachelor of Science degree in Chemistry is 120 units, of which 81 units are in the major. Consult with an advisor for the specific number of units required in all areas of the degree including GE and free electives.

Requirements for the Major (81 units)

<table>
<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 1100 - General Chemistry I</td>
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<tr>
<td>CHEM 1110 - General Chemistry II</td>
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<tr>
<td>CHEM 2200 - Organic Chemistry I</td>
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<tr>
<td>CHEM 2201 - Organic Chemistry Laboratory I</td>
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<td>CHEM 2211 - Organic Chemistry Laboratory II</td>
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<td>MATH 2110 - Calculus I</td>
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<td>MATH 2120 - Calculus II</td>
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<td>MATH 2130 - Calculus III</td>
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<td>MATH 2150 - Differential Equations</td>
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<tr>
<td>PHYS 2100 - General Physics I Mechanics and Therodynamics</td>
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<td>PHYS 2200 - General Physics II, Electromagnetism and Optics</td>
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Upper Division Required Courses (37 units)

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<tr>
<th>Course Name</th>
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<tbody>
<tr>
<td>CHEM 3100 - Writing for Chemists</td>
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<tr>
<td>CHEM 3200 - Organic Chemistry II</td>
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<td>CHEM 35001 - Quantitative Analysis</td>
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<tr>
<td>CHEM 3600 - Inorganic Chemistry</td>
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<tr>
<td>CHEM 4300 - Introduction to Biochemistry</td>
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<tr>
<td>CHEM 4410 - Physical Chemistry: Quantum Mechanics and Kinetics</td>
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<tr>
<td>CHEM 4431 - Physical Chemistry Laboratory</td>
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<tr>
<td>CHEM 4480 - Advanced Synthetic Methods</td>
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<tr>
<td>CHEM 4450 - Physical Chemistry: Thermodynamics</td>
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<tr>
<td>CHEM 4480 - Physical Chemistry: Quantum Chemical Methods</td>
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</table>

Students must select 2 courses from the following Advanced Analytical Chemistry course options. The third course may be used as an elective:

<table>
<thead>
<tr>
<th>Course Name</th>
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<th>Grade</th>
<th>Gen Ed</th>
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</thead>
<tbody>
<tr>
<td>CHEM 4510 - Advanced Analytical Chemistry: Optical Spectroscopy</td>
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<tr>
<td>CHEM 4520 - Advanced Analytical Chemistry: Analytical Separations and Mass Spectrometry</td>
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<tr>
<td>CHEM 4550 - Advanced Analytical Chemistry: Electrochemistry and Surface Techniques</td>
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<tr>
<td>CHEM 4890 - Molecular Science Capstone</td>
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</tbody>
</table>
BS Chemistry majors can follow the same process to decide what to take.
Registration Today

• If you believe you have taken a chemistry course pre-requisite and it doesn’t show up appropriately on your CAAR, you won’t be able to register for that class. Today we will issue a permit (come see me, then Ms. Estrada). You must ALSO make an appointment with the Department chair to permanently fix this so you will be able to register and graduate!

• For OTHER departments’ courses with those issues, you must go to that department to obtain a permit for registration (bring your unofficial transcript):
Registration Today

If needed classes are closed:
• Come to the first day of class in case instructors can add you due to students dropping
• Sometimes additional sections are authorized during the first week of classes, so be alert
While you are at Cal State LA, you will discover/confirm what you love to do and what your strengths are.

Combine these with your degree in Chemistry or Biochemistry (perhaps even a minor as well?) and pursue a satisfying and rewarding career!
Thanks and good luck!

QUESTIONS?