

## Chemistry 30B

at De Anza College

## *Intro to General, Bio & Organic Chemistry (II)*

Spring 2015

section01 — CRN 42691

Introduction to General, Bio & Organic Chemistry II is the second part of a multiple part series. This 5 unit course will be taught from 04/06/2015 through 06/26/2015 with a final exam on Tuesday 06/23/2015 4-6pm. The class will be lead by Prof. Nick DeMello (email [nick@chemlectures.com](mailto:nick@chemlectures.com)).

### Course Description:

This class is for students entering the allied health fields. The focus of the second part of Introduction to General, Organic, and Biochemistry is organic and biochemistry. The topics included in organic chemistry are: hydrocarbons, alcohols, thiols, ethers, carboxylic acids, esters, amines, and amides. Various physical and chemical properties of these organic substances will be studied along with nomenclature and structural features. The topics included in biochemistry are: carbohydrates, fatty acids and lipids, amino acids and proteins, nucleic acids and DNA. Various physical and chemical properties of these biological molecules will be studied. A brief introduction to metabolism will also be discussed.

### Prerequisites:

- Required: Chemistry 30A or Chemistry 50 or Chemistry 1A.
- Recommended: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273

### Required Materials:

- Textbook, Timberlake Chemistry: An Introduction to General, Organic and Biological Chemistry, 12<sup>th</sup> Ed., Pearson / PrenticeHall 2015 ISBN 0-321-90844-9. Earlier editions **may** be acceptable (ask your instructor).
- Lab manual, Catalyst: Introduction to General, Organic and Biochemistry, custom lab manual for Chem 30A and 30B, Pearson Learning Solutions 2012 ISBN 1-256-17651-6 (available from the campus bookstore)
- A spiral bound notebook for doing problems in class, taking notes, and recording data.
- Pencils (2) with an eraser should be brought to every class.
- Internet access (answer keys, worksheets, lecture slides, and other resources will be available only online).
- Laboratory safety goggles (can be purchased at the campus bookstore) are required for all lab experiments.
- A simple scientific calculator. The calculator must do scientific notation, log and square root functions. Anything more than that is a not needed and will likely slow you down. Keep it simple. Cell phones, PDAs, smart phones, laptops, or other personal electronics devices are **not** an acceptable substitute.

## Structure

### Lecture & Discussion:

Lecture will be held from **5:30pm to 7:20pm (1 hr 50 min) Tue & Thr, in room G1 building G**. Lecture attendance is required. You must sign the daily lecture attendance sheet to have your attendance recognized — not signing the sheet is the same as not attending class. Students missing more than two consecutive lectures, more than four lectures in total, or any lectures during the first two weeks of class, may be dropped from the class.

Lectures will parallel the content in the class textbook. Prior to lecture, students are required to read the assigned textbook through the section indicated on the course schedule. Students are encouraged to write down any questions that occur during reading for discussion in lecture and to make note of definitions and formulas introduced in the text. The lecture will assume students have read the assigned sections.

## Laboratory:

Lab session will be held from **7:30pm to 10:20pm (2 hr 50 min) Wednesdays, in room 2210 building SC2**. Lab attendance is required. You must sign the daily lab attendance sheet to have your attendance recognized — not signing the sheet is the same as not attending class. This is a separate sign in sheet from the lecture attendance sheet. Two or more absences from lab may result in the student being dropped. There are no make-up labs.

Lab session will offer students the opportunity to explore many of the topics presented in the course. Each session will involve a separate, predetermined experiment from the class lab manual. Experiments are listed in the lab schedule. Students must review the experiment prior to class and complete any pre-lab questions or preparations prior to lab. Many lab activities may begin with a pre-lab quiz and require a post lab report. Students unable demonstrate proper preparation may not be allowed to participate in that days lab activity.

Most experiments will be done individually. Regardless of whether the experiment is an individual or group project, each student is individually responsible for recording all experimental data, including printing out their own copy of any spectra or other results produced in the lab. Each student is responsible for submitting their own report for every experiment.

Chemistry labs are dangerous. The chemicals we employ and study are interesting because of their tendency to change one substance into another. In other words, almost every chemical you work with is either corrosive, toxic, volatile, combustible or otherwise dangerous. Safety policies required by the college and state will be strictly enforced.

Safety policies include (but are not limited to):

- Safety goggles must be worn at all times in the lab, unless the instructor specifically tells you otherwise.
- Students must wear clothes that adequately cover legs, arms, and feet. No open toed shoes, no shorts, sleeveless shirts, etc.
- No draping or baggy clothing. Long hair must be tied back. Most lab fires start in loose hair or clothing.
- No food or drink is permitted in the lab or in the halls outside the lab. While there is adequate ventilation in the labs for most practices, many foods readily absorb chemical vapors and can become toxic in a lab environment.

A complete list of safety polices will be provided during the first lab period. Students must agree to abide by all safety polices and will be asked to sign a contract to that effect. Students violating that will be asked to leave the lab and may be dropped from the class. At the instructors discretion, points may be removed the from the students safety score instead, as a one time warning.

Reports and other assignments are due at the start of the next lab period following completion of the activity, unless your instructor specifies otherwise. Students may submit lab reports only for activities in which they participated. Missed labs will result in zero points for that activity.

## Homework:

Questions are assigned from each textbook chapter. These questions are intended to help direct study focus, provide students with the opportunity to test their preparedness for quizzes and exams, and encourage discussion of various topics within the course. Lists of homework problems for each chapters are posted on the class website and answers to each question can be found at the end of the respective chapter. Homework will not be collected.

## Exams & Quizzes:

At the end of each chapter, a summary quiz (40 pts) will be given in lecture. A students best 6 scores will count towards the final course grade. Three midterm exams (120 points each) will be given according to the class schedule. Midterm exams will be held during lecture period. According to the spring final exam schedule, the Final Exam (200 points) will be from **4-6pm on Tuesday 06/23/2015 room G1 building G**.

Students are required to bring a scientific calculator, pencils (2), and an eraser to each class and these will be required for all quizzes and exams. No notes, books, scantron forms, blue books, or other materials are required or will be permitted.

There are no make-up exams or quizzes. Exams and quizzes cannot be taken early. A missed exam or quiz will result in zero points for that assessment. The final exam is comprehensive and is required. Not taking the final exam will result in a failing grade for the course.

## Grading

There is no curve. There is no extra credit. Grades are based on a percentage of total points achieved to total points possible. Points are earned for quizzes, exams, lab experiments (lab report plus any pre-lab quiz), the lab practical and for lab safety. The total points expected to be offered this semester is approximately 1,000 — broken down as follows.

240 pts	Quizzes (6 scores; 40 pts each)	24%	Lecture 80%
360 pts	Midterm Exams (3 exams; 120 pts each)	36%	
200 pts	Final Exam (comprehensive; 200 pts)	20%	
120 pts	Lab Experiments (best 8 scores; 15 pts each) (total points include pre-lab & reports)	12%	Lab 20%
60 pts	Lab Practical (60 pts)	6%	
20 pts	Lab Safety	2%	
1,000 pts		100%	

Students who earn 90% or more of the available points will receive an A grade. Students who earn less than 90% but 80% or more of available points will receive a B grade. Students who earn less than 80% but 70% or more of available points will receive a C grade. Students who earn between 70% and 55% will receive a D grade.

Where allowed by campus policy, a “+” prefix will be attached to B and C grades when a student earns points in the top half of each respective range. Students who earn less than 55% of the total possible points or who fail to take the final exam will receive a failing grade for the course.

## Resources

### Chem Website 30B:

The course syllabus, schedule, topics lists, study guides, worksheets, answer keys and other class resources can be found on the chemistry website for 30B at this URL:

<http://chem.ws/30B>

### Topic Lists:

A list of the specific topics we intend to cover in lecture and lab is provided on the class website, organized by chapter of the class textbook. Additional topics may be added during the semester and not all will be tested for on in any given exam or assignment. Students are encouraged to use this topic list in preparing for lecture, reviewing chapters, exam preparation, and determining if Chemistry 30B meets the student's personal objectives in studying chemistry.

### Student Success Center:

The Student Success Center offers workshops, tutoring, and support for most De Anza classes. This is a unique and valuable resource. The center offers a great environment for study groups to meet. Students are strongly encouraged to explore and make use of the center.

- Math, Science & Technology Resource Center: S43 / 408.864.8683
- Academic Skills Center: ATC 302 / 408.864.8253
- General Subject Tutoring: ATC 304 / 408.864.8682
- Listening and Speaking Center: ATC 313 / 408.864.5385
- Writing and Reading Center: ATC 309 / 408.864.5840

Hours vary by program. See <http://www.deanza.edu/studentsuccess> for details.

## Notices

### Important Dates (Add these to your Calendar — Missed Exams cannot be made up!)

- April 7th — First Day of Class
- April 30th — Midterm Exam #1
- May 19th — Midterm Exam #2
- May 23rd - 25th — Holiday, No Classes
- June 4th — Midterm Exam #3
- June 17th — Lab Practical (Lab Exam)
- June 23rd — Final Examination

### About transitioning into a collegiate environment.

“We teach rose bushes and ivy where to grow. Infants, toddlers, and children are taught right from wrong and other essential lessons. Useful skills, necessary limits, and entertaining tricks are taught to service animals and pets. Teaching is acting upon another to cause them to know something. Out of necessity teaching is generally done without a subject's knowledge, regardless of their consent, and often against their will.

As children become adults, the educational process for them changes. We teach less and ask students to learn more. Required lessons are slowly replaced with opportunities to explore and seek out whatever knowledge a student may choose to make their own. Eventually teaching ends and young adults graduate from even our highest schools, but opportunities to learn may continue. The collegiate environment is not a school. There are no teachers here and enrollment is not required.

If you take this class, you are doing so of your own free will. You are choosing to attempt to master an extremely challenging subject. The faculty and staff of this college will do our best to assist you in your challenge. But passive attendance and simply doing as you are told will not be sufficient. The knowledge proffered here must be taken up, considered, and made your own. You face a difficult challenge. Success is not guaranteed, regardless of effort or intent.

This college also offers you the benefit of having your knowledge tested, graded and certified if you meet a level of mastery determined by the state and college. This certification is not a reward or payment for effort. It is recognition of learning, of what knowledge you succeed in making your own. It is a worthy achievement that few will accomplish. It is something to be proud of.”

### Academic Integrity Policy (from the De Anza College Catalog)

*“De Anza College is committed to excellence in the pursuit of learning and academic achievement by its students. To further this goal, the college is committed to providing academic standards that are fair and equitable to all students in an atmosphere that fosters integrity on the part of student, staff and faculty alike. The student's responsibility is to perform to the best of his/her potential in all academic endeavors. This responsibility also includes abiding by the rules and regulations set forth by individual faculty members related to preparation and completion of assignments and examinations.*

*The submission of work that is not the product of a student's personal effort, or work which in some way circumvents the given rules and regulations, will not be tolerated.*

*The following types of misconduct for which students are subject to disciplinary sanction apply at all times on campus as well as to any off-campus functions sponsored or supervised by the college: cheating, plagiarism or knowingly furnishing false information in the classroom or to a college officer.”*

Any student found pursuing any form of academic dishonesty will be subjected to disciplinary action according to the guidelines described or referenced in the College Catalog and will receive a failing grade for the course.

### Student Learning Outcomes

Upon successful completion of Chem 30B course, a student should be able to:

1. Differentiate the general reactions of the principle organic functional groups.
2. Evaluate the major classes of biological compounds from a chemical perspective.