Lab: Tu 2-7:05 pm or Th 5:30-10:35 pm; Sci 305
Office Hours
MW 4:45-6 pm; Tu 1:15-1:45 pm; Th 4-5 pm or by appointment; also online via Discussion area of Canvas (will usually get response within 24-36 hours)

Web Site: homepage.smc.edu/kline_peggy/
Dr. Kline Contact Information
• Office: Sci 272
• E-mail: kline_peggy@gapps.smc.edu; kline_peggy@smc.edu (the most efficient way to contract this instructor)
• Phone: 310-434-4745

Grading
Assessment
Tests (3) 1200 points
Lab Citizenship 100 points
Lab Reports (8 of 9) 800 points
Qualitative Analysis 300 points
Total = 2400 points

Standards (based on total points):
A \geq 2160 points (90%)
B \geq 1920 points (80%)
C \geq 1560 points (65%)
D \geq 1200 points (50%)
F < 1200 points

No tests will be dropped. There is a provision for students who miss a test for a verifiable, documented reason in the Class Information section of this syllabus.

Lab Tests
There are three lab exams, worth 400 points each. They will be given during the lab time and will take 60-90 minutes. Topics for lab exam questions include questions answered for the lab reports, assigned reading, pre-lab lectures, and the experience of performing and writing up the labs. There will be no makeup tests. Lab tests are closed book and closed notebook.

Lab Reports
The lab report for each experiment consists of a typed portion (submitted via Turnitin) and the notebook pages for that experiment submitted as hard copies. See the Lab Notebooks and Reports handout for more information. The due date for the typed portion and the final set of notebook pages is usually the lab following the one when the experiment is completed. Late labs will be penalized at the rate of -2 points per commenced week, with no labs being accepted after the start of the third commenced week.

Notebooks
You must write in pen in a blank laboratory notebook with built-in carbon or carbonless pages. The one sold on the shelves with the required texts in the SMC bookstore is highly recommended. Notebooks may be evaluated “informally” throughout the semester, as well as formally grading your notebook copies with each experiment report. Deductions result from omissions, “fudging” of data, incoherence, lack of format, and other reasons. Deductions may occur at any point during the semester, and will occur if the instructor observes data being written anywhere except in your notebook. The instructor reserves the right to collect your notebook at any time during the semester. Again, there are more details in the online Laboratory Notebooks and Reports handout.
Class Information

- **Course material** will be posted on or linked from the class web site: [http://homepage.smc.edu/kline_peggy/chem-22/](http://homepage.smc.edu/kline_peggy/chem-22/). The instructor will send out communications to students using their official SMC email addresses and/or Canvas so make sure you check the email addresses associated with both of those. You are responsible for knowing about information sent to your official SMC address and via Canvas.

- **Contacting the instructor.** Use the Discussion area of Canvas to ask course-related (content and protocols) questions. Use email only for personal questions. Include the course name as the subject in any email to help keep it from getting trapped in the spam filter. The instructor reserves the right to ignore questions asked via email that should have been asked via the threaded discussion.

- Successful completion of this course will require full participation in all class activities. Punctuality is critical as well—plan to arrive on time each and every class period. Students who arrive late for lab and miss a portion of the pre-lab lecture may not be permitted to do that day’s lab. Students are responsible for knowing what happens in class, including schedule changes, material not in the book, information about what’s going to be on the next test and so on. It is a good idea to have the names and contact information for a few students whom you can contact if you miss class.

- **Office hours.** These are for you. If there are already students in the office, please come in and join us. I take questions on a rotating basis if more than one student is in the office. If I seem to be busy with something else when you come by during office hours that’s just because no one is there yet and I’m looking for something else to do. Interrupt me.

- **Electronic devices.** Please adjust cell phones, laptops, and tablets, etc. so they do not make noise and/or disrupt class members; the instructor reserves the right to confiscate such devices that do make noise and/or to evict students who are not using them appropriately during class time.

- **No eating, gum chewing, or drinking** is permitted in classrooms or labs; no food or drink is permitted unless it’s sealed so that it absolutely cannot spill.

- **Tutoring.** The Science Learning Resource Center (Sci Tutoring, [http://www.smc.edu/AcademicPrograms/Tutoring/Pages/Science-LRC.aspx](http://www.smc.edu/AcademicPrograms/Tutoring/Pages/Science-LRC.aspx)), provides free tutoring services for SMC students and other resources.

- **Religious Holiday Absences.** SMC Academic Regulation 5530 states: “It is the college practice that students may be required to make-up missed work due to absences caused by the observance of a religious holiday, but they cannot be penalized for such absences. This practice applies to any work affecting a student’s grade.” My policy is to avoid scheduling tests and quizzes on religious holidays that commonly affect students in my classes and, whenever possible, to schedule labs that can easily be rescheduled or done on a student’s own time on religious holidays that affect large numbers of students. Students must let the instructor know by email within the first week of class of any planned absence due to a religious holiday. I try to offer students opportunities to make up labs they have to miss and expect students to make a reasonable effort to make up said labs. I do lecture on religious holidays and students who need to miss class are expected to get notes from other students.

Course Materials and Resources

**Books and Supplies**

- **Lab Experiments (Procedures)** - *SMC Chem 24 - Organic Chem II Laboratory Manual*. This consists of plastic-wrapped loose-leaf pages taken from the book *Modern Projects and Experiments in Organic Chemistry*, 2nd ed. (Miniscale and Standard Taper Microscale), by Mohrig, Hammond, Schatz, and Morrill.; you may use the book itself which can often be found online for less money than the loose-leaf pages.
- **Lab Notebook** with NCR or Carbon pages - required; the one sold in the SMC Bookstore on the shelves with the course textbooks is highly recommended. You need to be able to make a copy of your work during lab.

**Available via Internet**

- Class Bulletin Board - eCompanion
- **Mohrig Website**: [http://www.macmillanhighered.com/Catalog/studentresources/mohrig4e#](http://www.macmillanhighered.com/Catalog/studentresources/mohrig4e#)
- Turnitin.com - submit lab reports electronically
- **Lab Notebooks and Reports handout**: [http://homepage.smc.edu/kline_peggy/chem-21-lab/lab-notebooks-and-reports.html](http://homepage.smc.edu/kline_peggy/chem-21-lab/lab-notebooks-and-reports.html) - you are responsible for this content.

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- Turnitin.com - submit lab reports electronically
- **Lab Notebooks and Reports handout**: [http://homepage.smc.edu/kline_peggy/chem-21-lab/lab-notebooks-and-reports.html](http://homepage.smc.edu/kline_peggy/chem-21-lab/lab-notebooks-and-reports.html) - you are responsible for this content.

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• SMC accommodates students with disabilities. If you qualify for any special accommodations due to a disability, you must officially process your request through the Disabled Students Programs and Services (DSPS) office. Instructor must receive Testing Accommodation Authorization Form before the first anticipated accommodation and with sufficient notice to provide materials to DSPS. No retroactive accommodations will be provided. The student is solely responsible for securing any provisions to which they may be entitled. Scheduling of accommodated exams must be made through DSPS. Students must provide the instructor with the Testing Accommodation Appointment form before each test or quiz for which they plan to use DSPS and not change their mind. Be cognizant of DSPS hours. The DSPS office is located in the Admissions/Student Services Complex, Room 101, and the phone numbers are (310) 434-4265 and (310) 434-4273 (TDD). If you believe you have a learning disability that has not yet been documented, please make an appointment at the DSPS office.

• There will be no makeup tests. If you miss a test for a legitimate, documented reason, with the permission of the instructor, you average on the other two tests will be used in lieu of the missed test score.

• “Graphing” calculators are permitted during tests for which calculators are permitted until the first occurrence of one being used improperly; from that point on, they will not be permitted for any student in any class. No cell phones, dictionaries, or translators are allowed during quizzes or tests.

• Re-grading. Tests may be submitted for re-grading (or re-adding) within one week of their initial return to students. Please note that the instructor reserves the right to re-grade the entire test. Answers that look as if they could have been changed after they were graded will not be considered for re-grading.

• Missed labs. There will be no make-up labs, unless you arrange to do the lab during another lab time when that section is doing the experiment. If you miss one lab, it will be the one dropped. If you miss more than one lab, you will forfeit the points. Students who must miss their regularly-scheduled lab time due to a day of religious observance may not be penalized; however, they must make a reasonable attempt to attend another session and/or complete the lab report. Students will not get credit for writing a lab report for a lab they did not attend.

• Students who miss more than two labs will not receive a passing grade in the course except in the case of exceptional circumstances.

• College Dates and Deadlines. See the SMC Dates and Deadlines web page for enrollment and payment deadlines and Corsair Connect for individual course withdrawal deadlines. The instructor reserves the right to drop any student who misses any class meetings during the first week. The instructor will probably drop students who miss a test without notification or appear to vanish; however, clerical errors do occur. If you want to be sure you are dropped, do it yourself. Aside from the circumstances under which you may be dropped by the instructor, it is nevertheless your responsibility as a student to withdraw from class if you do not intend to complete it. Students must not expect faculty to initiate withdrawal procedures for them. If you wish to drop this class, you may do so through Corsair Connect. Students may process a drop for themselves through 75% of the class, which is through the 12th week in a regular semester. Data regarding the withdrawal parameters for each class are provided within each student’s individual Corsair Connect account.

• The Academic Honesty Policy of Santa Monica College will be strictly enforced. Acts of academic dishonesty including, but not limited to, plagiarism, providing test/quiz answers to another student, and copying from another student can result in a failing grade for the assignment or the course. Plagiarism consists of presenting the words of another person as your own and includes “recycling” written work from other students and the Internet. Both the provider and the recipient of the information will be penalized. In addition, lying, manipulative or disruptive behavior will not be tolerated. More information on SMC policies is available on the website for The Office of Student Judicial Affairs. Students need to be familiar with the SMC Code of Academic Conduct.

• Turnitin. This course will require electronic submission of written assignments through Turnitin (http://www.turnitin.com) via Canvas. Turnitin’s OriginalityCheck conducts textual similarity reviews of submitted papers. When papers are submitted to Turnitin, the service may retain a copy of the submitted work in the Turnitin database for the sole purpose of detecting plagiarism in future submitted works. Students retain copyright on their original course work. Please note that Turnitin does not accuse you of plagiarism; it is only identifying similarity to content in its database, and you or I will determine whether you used source material accurately and ethically. Additionally, I will use the GradeMark feature to grade your labs online. The use of Turnitin is subject to the Terms of Use agreement posted on the Turnitin.com website. There is a Turnitin handout from the instructor also linked from the course web page.

• Safety, Personal Protective Equipment (PPE) and Emergency Information. Chemical splash goggles must be worn by all students whenever they, or anyone else, are working with reagents in the laboratory. An extremely limited supply of goggles may be available in the lab for students to borrow. If you do not have a pair of appropriate goggles to wear.
for lab and none are available in the lab, you will have two options—go buy some or don’t work in lab that day. Students must supply nitrile or neoprene gloves for lab. Gloves must be removed and placed in the glove waste container when contaminated or any time you leave the lab. Students in organic chemistry classes must wear a blue flame-resistant lab coat whenever anyone in the room is conducting an experiment. If a student forgets his/her lab coat, he or she may not remain in the lab without it. A limited supply of lab coats is available to rent from the stockroom. A link to the SMC Safety Rules, PPE Information, and Emergency Information is on the course web site. All students must sign a statement indicating that they are familiar with the above Safety, PPE, and Emergency information before being allowed to work in the lab.


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### Official Course Information

Link to official course outline - http://www.curriculnet.com/SantaMonica/reports/course_outline_html.cfm?courses_id=242

### Catalogue Description

This course is the second semester of organic chemistry laboratory. The laboratory work involves synthesis, structure determination, reaction mechanisms, and qualitative analysis. The lectures will discuss the theory and techniques that relate to the experiments that are performed, including NMR, IR, organic qualitative analysis, and various forms of chromatography. A special emphasis will be placed on FT-NMR, utilizing SMC’s 350 MHz spectrometer. Chem 21, 22, and 24 constitute two semesters of organic chemistry with two semesters of laboratory. **Prerequisite:** Chemistry 21 (Organic Chemistry I with Lab) with a grade of C or better. It is imperative that students have previously taken an Organic Chemistry Lab.

### Content

Preparation of n-Butyl Benzoate using a Phase Transfer Catalyst; Electrophilic Aromatic Substitution Reaction; Synthesis of Para Red via a Diazonium Salt; Synthesis and Identification of an Ester from an Unknown Alcohol; Preparation of an Amide of an Amino Acid; Synthesis of and Using a Grignard Reagent; Oxidation-Reduction Cycle of t-Butylcyclohexanol and t-Butylcyclohexanone; Aldol Condensation Reaction; Organic Qualitative Analysis; NMR Analysis of Products—Including introduction to 2D NMR and determination of a stereoisomeric mixture through analysis of complex splitting patterns in proton NMR.

### Student Learning Outcomes

As assessed by: questions on exams and/or observation of laboratory performance and/or evaluation of notebook data and lab reports. 1-The student will follow a logical process based on well-established scientific principles and demonstrate the ability to use the appropriate problem-solving techniques to solve a scientific problem such as the determination of the structure of a compound based on spectroscopy (IR, NMR, MS) and/or chemical evidence, or the prediction of a compound's chemical and/or physical behavior based on the behaviors of similar compounds. 2-When conducting a laboratory experiment, the student will follow written procedures commonly used in the organic lab (such as thin-layer chromatography, recrystallization and reflux) accurately and safely. The student will maintain an accurate and organized lab notebook. When completing a lab report the student will apply the scientific method correctly by being able to state a hypothesis, take careful measurements, estimate uncertainties and draw appropriate conclusions based on gathered data and scientific principles. 3-The student will explain observable phenomena using appropriate scientific theories, such as explaining the likely meaning of a lower-than-expected melting point, correlating the color and visible spectrum of a molecule, or other observations made during lab experiments.

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### Lab neatness.

Students are responsible for keeping the lab neat. Each student will be assigned one clean-up day during the semester. Any chemical samples kept at the end of the lab period must be labeled with the student’s and instructor’s name, date, and identity of substance(s) present. Dispose of unknowns in the appropriate waste container, clean the vial in which they came, and return the empty clean vial to the instructor. There are ten course points for Lab Citizenship. Loss of points may result from leaving your area a mess, not putting lids on bottles, spilling material on balances, not cleaning up on your assigned day, and other infractions. Note that the entire class may be penalized for certain items if they cannot be attributed to specific students.

- **Additional lab information.** See the Lab Notebooks and Reports handout and the Chem 24 Lab webpage (http://homepage.smc.edu/kline_peggy/chemistry-24-organic/) for additional information about the lab and lab reports.