SAINT LOUIS UNIVERSITY
MADRID

CHEM 2425 M36/M37–Organic Chemistry lab II
Spring 2018

Class Days and Time: M 19:00-21:50 (M36) and T 19:00-21:50 (M37)
Classroom: PAH-22
Prerequisite(s): CHEM-2415; **Co-req.**: CHEM-2420
Credit(s): 1
Instructor: Emilio M. Pérez
Instructor's Email: emiliomanuel.perez@slu.edu
Instructor's Campus Phone: 91 554 58 58, ext. 266
Office: Padre Arrupe Hall, 2nd floor
Office Hours: M 18:00 - 19:00 (M36) and T 18:00 - 19:00 (M37)

Course Description:

This lab course is a one credit hour laboratory course. It introduces a number of practical experiments on the most usual transformations carried out in any organic chemistry or biochemistry lab today. We are going to deal with everyday life organic reactions and the experimental complications that come along with. You should make sure to read the lab manual and textbook before attending the lab sessions. Do also take time to prepare pre-lab questions, as this helps you understand the purpose of the lab.

Course Goals and Student Learning Outcomes:
To apply the knowledge obtained in Chem 2420 lectures to problem solving in the laboratory. To develop good laboratory techniques; work safely; take data carefully; record relevant observation; use time effectively; assess the efficiency of your experimental method; plan for the isolation and purification of substances you prepare; and characterize substances you prepare by physical and spectroscopic means and synthesize organic substances.
At the end of the course, students will:

1. To communicate organic chemistry with clarity. Attainment of this learning outcome will be reflected by the students' abilities to:
- Follow oral and written instructions to successfully complete laboratory assignments.
- Work with other student in assigned group projects.
- Maintain a laboratory notebook.
- Write formal laboratory report as chemists write.

2. Apply available information technology to conduct library research in the field of chemistry. Attainment of this learning outcome will be reflected by the students' abilities to:
- Using references sources, ascertain the physical properties, hazards and handling precautions of all reagents and products used.
- Conduct library search on projects as assigned.

3. Demonstration of a working knowledge of organic synthesis and characterization.
- Successfully completing laboratory assignments.

Saint Louis University - Madrid Campus is committed to excellent and innovative educational practices. In order to maintain quality academic offerings and to conform to relevant accreditation requirements, the Campus regularly

assesses its teaching, services, and programs for evidence of student learning outcomes achievement. For this purpose anonymized representative examples of student work from all courses and programs is kept on file, such as assignments, papers, exams, portfolios, and results from student surveys, focus groups, and reflective exercises. *Thus, copies of student work for this course, including written assignments, in-class exercises, and exams may be kept on file for institutional research, assessment and accreditation purposes.* If students prefer that Saint Louis University - Madrid Campus does not keep their work on file, they need to communicate their decision in writing to the professor.

Required Texts and Materials:

Attendance Policy:
Laboratory attendance is mandatory. You should sign-in at the beginning of each laboratory session and are required to stay either until the end of the lab session or until all measurements and analyses have been recorded in your laboratory notebook. You may sign out only after the approval of a lab instructor.

Course Requirements and Grading Rationale/System:
Lab notebook
You must record the complete lab session in your notebook. You are not expected to reproduce the script but should carefully note all measurements and procedures undertaken. You should also carry out an analysis of your measurements to check that your data are valid and that you have recorded everything that is needed to produce a report on the experiment.
The work recorded in the notebook will be used in the continuous assessment and will carry 15% of your grade for the lab. It is therefore extremely important to keep a neat and complete diary.

Preparing for and carrying out the experiments
Lab scripts are given in the lab manual, available from the university bookstore. As a rule, students will work in pairs and should make every effort to share the workload equally between them. Students working together have to record the experiment in their individual lab notebooks for later assessment. Before each lab session, the student must read the manual, answer the pre-lab questions individually and hand in the answer sheet to the lab instructor.

Write-ups of experiments
All the reports of experiments have to be handed in. A lab report template is included in each lab manual, and each report should contain the following sections:

(a) Reaction scheme (if applicable)
(b) Description of the procedure (s) followed
(c) Presentation of experimental results
(d) Discussion (Evaluation of your results, attempt explanation of unexpected results and failures, comparison with theory)
(e) Conclusions including a very brief summary of the outcome of the experiment and what it shows
(f) References (should be referred to in the text)

The write-ups should be informative and concise, and should contain tables and figures. They should be typed (e.g. using a word-processor like WORD). The submission dates for the reports will be one week after the completion of the lab session.

Grading
So, the overall weight of each parameter is:

Midterm exam:	10%
Final Exam:	20%
Lab reports:	40%
Lab notebook:	15%
Pre-lab questions:	15%

The midterm- and final exams will consist of a set of theoretical questions related to the labs done so far, and the final exam will be cumulative. Lab reports should be handed in the week after the lab session, and should be graded and returned to the student within one week. Lab reports handed in with up to one week of delay will result in a

reduction of the grade by 25% and if handed in later than one week after the deadline, it will automatically result in the grade of F for the given lab. The prelab questions should be handed in before each lab session (if not it will result in the grade of F for that given lab), and the lab notebook should be written throughout the course of an experiment.

Grading Scale for the Course

A:	93-100%
A-:	90-92.9%
B+:	87-89.9%
B:	83-86.9%
B-:	80-82.9%
C+:	77-79.9%
C:	73-76.9%
C-:	70-72.9%
D:	60-69.9%
F:	00-59.9%

Policies

- Students are encouraged to participate in class discussions and to ask questions.
- Announcements may be made during the semester.
- Syllabus, reading and homework problems are subject to change.
- Students are responsible for all lecture material, handouts, homework and assigned reading.
- It is mandatory to attend all lab sessions unless a reasonable excuse is given.
- Make up exams are not given. Students who legitimately miss an exam, due to a doctor's visit or family emergency must provide written documentation of the circumstances. A letter from the university counselor is accepted. Exams that are missed illegitimately result in a score of F. Grades for these students will be based on the remaining exams. Missing more than one exam results in an F grade.

E-mail: Campus and course announcements will often be handled by e-mail. Students should check their "@slu.edu" e-mail regularly.

University Statement on Academic Integrity: Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The governing University-level Academic Integrity Policy can be accessed on the Provost's Office website. Additionally, SLU-Madrid has posted its academic integrity policy online: http://www.slu.edu/madrid/academics. As a member of the University community, you are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions and appeals.

The professor will review these matters during the first weeks of the term. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program, or the Academic Dean of the Madrid Campus.

University Title IX Statement: Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX deputy coordinator, Marta Maruri, whose office is located on the ground floor of Padre Rubio Hall, Avenida del Valle, 28 (mmaruri@slu.edu; 915-54-5858, ext. 213) and share the basic fact of your experience with her. The Title IX deputy coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the SLU-Madrid's Counseling Services on the third floor of San Ignacio Hall (counselingcenter-madrid@slu.edu; 915-54-5858, ext. 230) or Sinews Multipletherapy Institute, the off-campus provider of counseling services for SLU-Madrid (www.sinews.es; 917-00-1979). To view SLU-Madrid's sexual misconduct policy and for resources, please visit the following web address: http://www.slu.edu/Documents/Madrid/campus-life/SLUMadridSexualMisconductPolicy.pdf.

Students with Special Needs: In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor.
- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Academic Dean's Office (San Ignacio Hall) or by going to https://www.slu.edu/madrid/academics/student-resources.

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services at disabilityservices-madrid@slu.edu or +915 54 58 58, ext. 230 for an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services. For more information about academic accommodations, see "Student Resources" on the SLU-Madrid webpage.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.

(IF APPLICABLE): Mandatory Trips/Activities: Students enrolled in this class must participate and make payment for all mandatory trips/activities. The prices posted on the web are approximate; the final price will be based on the number of students enrolled on the last day of the Add/Drop period. All students, including those who withdraw from the class after this date, are required to pay these fees, which are non-refundable, unless the trip is cancelled due to low enrollment. Please review SLU-Madrid's trip policies, available on-line.

Spring 2018 Course Schedule:

JANUARY	
Wednesday 10	First Day of Classes
Thursday 11	
Friday 12	
Monday 15	
Tuesday 16	Introductory Session (both M36 and M37)
Wednesday 17	
Thursday 18	
Friday 19	
Sunday 21	Last Day to Drop a Class without a Grade W and/or Add a Class; Last Day to Choose Audit (AU) or Pass/No Pass (P/NP) Options
Monday 22	
Tuesday 23	Symyx tutorial (both M36 and M37)
Wednesday 24	
Thursday 25	
Friday 26	No Classes Application Deadline for Spring Semester Degree Candidates
Monday 29	Alkyl Halides: Structure and Reactivity in Nucleophilic Substitutions
Tuesday 30	Alkyl Halides: Structure and Reactivity in Nucleophilic Substitutions
Wednesday 31	
FEBRUARY	
Thursday 1	
Friday 2	
Monday 5	Alkyl Halides: Structure and Reactivity in Nucleophilic Substitutions
Tuesday 6	Alkyl Halides: Structure and Reactivity in Nucleophilic Substitutions
Wednesday 7	
Thursday 8	
Friday 9	
Monday 12	Steam distillation of essential oils
Tuesday 13	Steam distillation of essential oils
Wednesday 14	Ash Wednesday Registration for Summer 2018 Begins
Thursday 15	
Friday 16	
Monday 19	Diels-Alder reaction
Tuesday 20	Diels-Alder reaction
Wednesday 21	
Thursday 22	No Classes (Winter Break)
Friday 23	
Monday 26	Electrophilic aromatic substitution
Tuesday 27	Electrophilic aromatic substitution Professors' Deadline to Submit Midterm Grades
Wednesday 28	
MARCH	
Thursday 1	
Friday 2	
Monday 5	Synthesis of *p*-nitroaniline
Tuesday 6	Synthesis of *p*-nitroaniline
Wednesday 7	
Thursday 8	
Friday 9	Last Day to Drop a Class and Receive a Grade of W
Monday 12	Reactions of alcohols and phenols

Tuesday 13	Reactions of alcohols and phenols
Wednesday 14	
Thursday 15	Last Day to Submit Transfer Application for Fall Semester
Friday 16	
Monday 19	Reactions of aldehydes and ketones
Tuesday 20	Reactions of aldehydes and ketones
Wednesday 21	
Thursday 22	
Friday 23	
Monday 26	*Semana Santa* Holiday (Campus Closed)
Tuesday 27	
Wednesday 28	
Thursday 29	*Jueves Santo* (Campus Closed)
Friday 30	*Viernes Santo* (Campus Closed)
APRIL	
Monday 2	Synthesis of acetanilide and *p*-acetylaminophenol
Tuesday 3	Synthesis of acetanilide and *p*-acetylaminophenol
Wednesday 4	Registration for Fall 2018 Semester Begins
Thursday 5	
Friday 6	
Monday 9	Synthesis of dibenzalacetone
Tuesday 10	Synthesis of dibenzalacetone
Wednesday 11	
Thursday 12	
Friday 13	
Monday 16	Synthesis of aspirin
Tuesday 17	Synthesis of aspirin
Wednesday 18	
Thursday 19	
Friday 20	
Monday 23	Final exam
Tuesday 24	Final exam
Wednesday 25	
Thursday 26	
Friday 27	
Monday 30	
MAY	
Tuesday 1	*Día del Trabajador* (Campus Closed)
Wednesday 2	*Día de la Comunidad* (Campus Closed)
Thursday 3	Spring 2018 Final Day of Classes
Friday 4	Spring 2018 Final Exams
Monday 7	
Tuesday 8	
Wednesday 9	
Thursday 10	
Friday 11	University Housing Move-out Date
Saturday 12	Commencement
Sunday 13	Professors' deadline to submit spring 2018 final grades

Final Exam Schedules Spring 2018

	4 May (Fr)	**7 May** (Mn)	**8 May** (Tu)	**9 May** (Wd)	**10 May** (Th)
08:30-11:30	Mn classes that meet at 9:00 & 9:30	Mn classes that meet at 10:00	Mn classes that meet at 11:00 & 11:30	Tu classes that meet at 9:30	Tu classes that meet at 8:00
12:00-15:00	Tu classes that meet at 11:00	Mn classes that meet at 13:00	Tu classes that meet at 14:30	Mn classes that meet at 12:00 & 12:30	Tu classes that meet at 12:30
15:30-18:30	Mn classes that meet at 14:30	Tu classes that meet at 17:00 & 17:30	Mn classes that meet at 16:00	Tu classes that meet at 16:00	Mn classes that meet at 17:30
19:00-22:00	---	---	Mn classes that meet at 18:30 & 19:00	Tu classes that meet at 19:00	---