San José State University
Chemistry Department
Chem 270L, Advanced Chemistry Laboratory, Section 01, Spring, 2016

Course and Contact Information

Instructor: Maria Matyska-Pesek
Office Location: Duncan Hall 501
Telephone: 408 9244951
Email: Maria.matyska-pesek@sjsu.edu
Office Hours: F-11:30 to 1 pm and by appointment
Class Days/Time: F, 1:00 pm to 4:40 pm. (50 min for a seminar and 2 hours and 50 min for a lab)
Classroom: Seminar: Duncan Hall, room 415 and lab: Duncan Hall, room 413
Prerequisites: Satisfactory background in upper division chemistry and instructor consent.

Course Format
Format: One hour lecture and 2 hours 50 minutes hands on laboratory analysis (state of the art equipment).
Reports will be prepared using electronic lab notebook, which has to be purchased before the semester starts.
Link to the website will be provided.
Presentation of the data will be done using computer.
Required use of literature search programs: science direct, etc.

Canvas
Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas learning management system course website. You are responsible for regularly checking with the messaging system through MySJSU to learn of any updates.

Course Description
Lectures, discussions and reading assignments in special fields of chemistry. Topics vary. Course may be repeatable for maximum of 10 units. Prerequisite: Satisfactory background in upper division chemistry and instructor consent.

Learning Outcomes (Required) and Course Goals (Optional)
BS/BA CHEMISTRY PROGRAM LEARNING OUTCOMES ADDRESSED BY Chem 270L
PLO #6 - Answer questions regarding safe practices in the laboratory and chemical safety.

PLO #7 - Demonstrate safe laboratory skills (including proper handling of materials and chemical waste) for particular laboratory experiments.

**Course Learning Outcomes (CLO)**

Upon successful completion of this course, students will be able to:

- **CLO #1** Solve analytical problems in the field of High Performance Liquid Chromatography with Mass Spectrometry Detection (HPLC-MS)
- **CLO #2** He or she will be able to keep records of all performed analysis in a way that it is done in modern analytical laboratory.
- **CLO #3** Design and perform analysis of known standards as well as unknown samples using HPLC-MS technique
- **CLO #4** Identify, properly use, and care for equipment and supplies used in analytical laboratory
- **CLO #5** Identify the requirements for adequate protection of personnel form solvents and materials used in the analysis.

**Required Texts/Readings**

**Other Readings**

*Course material posted on Canvas*

**Other equipment / material requirements (optional)**

*Electronic lab notebook*

**Course Requirements and Assignments**

1. Oral presentation – upon completion of the LC-MS analysis students will present method development and results for the analysis.
2. Written report – is required to be posted on Canvas on a due date
3. Final exam – Canvas.

**Grading Policy**

Total of 500 points will be assigned for the course:

- 100 points – oral presentation in class
- 200 points – written report including data from LC-MS analysis, uploaded on Canvas
- 200 points – final exam

**Classroom Protocol**

*Safety rules are strongly enforced. Please bring your safety googles or check out pair from the Stock room, before coming to the class.*
University Policies

General Expectations, Rights and Responsibilities of the Student
As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf. More detailed information on a variety of related topics is available in the SJSU catalog, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding
Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Consent for Recording of Class and Public Sharing of Instructor Material
University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor’s permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
  - It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
  - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity
Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.
Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center at http://www.sjsu.edu/at/asc/ located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the Writing Center website at http://www.sjsu.edu/writingcenter. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on Facebook. (Note: You need to have a QR Reader to scan this code.)

SJSU Counseling Services

The SJSU Counseling Services is located on the corner of 7th Street and San Fernando Street, in Room 201, Administration Building. Professional psychologists, social workers, and counselors are available to provide consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling Services website at http://www.sjsu.edu/counseling.
# Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics, Readings, Assignments, Deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>02-05-2016</td>
<td>Lecture: Introduction to HPLC, Lab: Introduction to HPLC-MS equipment, solvents, samples requirements, system components and software structure.</td>
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<tr>
<td>2</td>
<td>02-12-2016</td>
<td>Lecture: Introduction to HPLC-MS, Lab: Group 1: Creation of LC-MS methods: isocratic and gradient, sample preparation, Group 2: literature search for analytical method required for LC-MS analysis of samples selected by individual students.</td>
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<tr>
<td>3</td>
<td>02-19-2016</td>
<td>Lecture: Discussion of methods of analysis developed by students for the samples chosen from the list. Lab: Group 2: Creation of LC-MS methods: isocratic and gradient, sample preparation, Group 1: literature search for analytical method required for LC-MS analysis of samples selected by individual students.</td>
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<tr>
<td>4</td>
<td>02-26-2016</td>
<td>Lecture: LC-MS continuation. Lab: sample preparation and analysis by LC-MS.</td>
</tr>
<tr>
<td>5</td>
<td>03-04-2016</td>
<td>Lecture: Discussion of sample preparation methods required to analyze samples selected by students, Lab: continuation of LC-MS analysis</td>
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<tr>
<td>6</td>
<td>03-11-2016</td>
<td>Lecture: LC-MS analysis in modern world. Lab: Finishing analysis of student’s samples, demo of LC-MS analysis using Agilent – TOF system</td>
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<tr>
<td>7</td>
<td>03-18-2016</td>
<td>Presentations of data obtained using LC-MS by students Group 1</td>
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<tr>
<td>8</td>
<td>03-25-2016</td>
<td>Presentations of data obtained using LC-MS by students Group 2</td>
</tr>
<tr>
<td>9</td>
<td>Monday, 05-23</td>
<td>Final exam – on Canvas, 1215-1430</td>
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