



## CHEMISTRY DEPARTMENT

### CHE 1002 - Chemistry in our everyday life: Chemistry of Cooking

3 units - Spring 2024

#### Welcome to CHE 1002:

Chemistry 1002 is an introductory chemistry class designed to teach you the basics of chemistry of cooking. It is suitable for anyone who has never taken any chemistry classes before and is a General Education requirement. Chemistry might be scary for some of you, but I would like to challenge you to work regularly, practice and ask questions in order to succeed. Some teaching methods used in this course (group and team work, learning activities) might be different than what you are used to, yet I am confident that it will improve your learning experience and you will be better prepared for your future endeavors. I am glad you are here and I look forward to helping you discover the importance of chemistry in cooking.

#### INSTRUCTOR

Dr. Matthieu Rouffet  
Office : Rohr Science 340  
Phone : 619-849-3278  
Email : [matthieurouffet@pointloma.edu](mailto:matthieurouffet@pointloma.edu)

#### Office Hours:

MW 10:30 am – 12:00  
pm and by appointment

#### TIME & LOCATION

Section 1 MWF 8:30 am – 9:25 am  
Lab Friday 2:45 pm – 5:30 pm

LSCC 204B  
Evans 112



#### TEXTBOOK & SUPPLIES

- Science of Cooking. Understanding the Biology and Chemistry Behind Food and Cooking. ISBN: 978-1-118-67420-8  
*Required.*

## PLNU MISSION

### *To Teach ~ To Shape ~ To Send*

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

## FOUNDATIONAL EXPLORATIONS MISSION

PLNU provides a foundational course of study in the liberal arts informed by the life, death, and resurrection of Jesus Christ. In keeping with the Wesleyan tradition, the curriculum equips students with a broad range of knowledge and skills within and across disciplines to enrich major study, lifelong learning, and vocational service as Christ-like participants in the world's diverse societies and culture.

## COURSE DESCRIPTION

An introduction to basic principles of chemistry as they apply to our everyday lives. The course will include discussions on the chemistry of one or more major topics chosen by the instructor. (Possible topics include cooking, forensic science, health and nutrition, sustainable energy, or climate and the environment).

## COURSE GOALS and LEARNING OUTCOMES

At the end of the course you will be able to:

- Design and conduct an investigation based on the scientific method.
- Analyze observable facts and numerical data to arrive at an evidence-based conclusion.
- Apply knowledge of fundamental chemistry/biochemistry principles to food and cooking examples.
- Identify and use appropriate and sufficient scientific evidence to evaluate claims and explanations about the natural and designed world in the context of food and cooking.

## GENERAL EDUCATION LEARNING OUTCOMES

- FELO 1d will be assessed directly using questions on the third quiz

## FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Traditional Undergraduate Records: Final Exam Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

## ADMINISTRATION

Exams and Learning Activities: Three (3) lecture exams, a comprehensive final exam and several

learning activities will be given during the semester. Make-up exams will be arranged only if the instructor is contacted prior to the scheduled exam time and then only if you present an institutionally valid excuse.

## EVALUATION

The activities described above will contribute to your total course grade according to the following:

Lecture Examinations (3)	40%
Learning Activities/homework (3)	40%
Final Examination	20%

Letter grades will be assigned at the end of the course based on your percentage of total possible points, according to the following scale:

<b>A<sup>-</sup></b> 90 – 92.9 %	<b>A</b> 93 – 100 %	
<b>B<sup>-</sup></b> 80 – 82.9 %	<b>B</b> 83 – 86.9 %	<b>B<sup>+</sup></b> 87 – 89.9 %
<b>C<sup>-</sup></b> 70 – 72.9 %	<b>C</b> 73 – 76.9 %	<b>C<sup>+</sup></b> 77 – 79.9 %
<b>D<sup>-</sup></b> 60 – 62.9 %	<b>D</b> 63 – 66.9 %	<b>D<sup>+</sup></b> 67 – 69.9 %
<b>F</b> < 59.9 %		

## CHEMISTRY 1002 TENTATIVE CLASS SCHEDULE

WEEK	DATE	LECTURE TOPICS	CHAPTERS	LAB
Week 1	Monday 01/08	Introduction: syllabus/ course overview	////////////////////	Friday 01/12 Lab 1: Intro to cooking (Group 1)
	Wed 01/10	Ch 1: The Science of Food and Cooking: Macromolecules	1	
	Fri 01/12	Ch 1: The Science of Food and Cooking: Macromolecules	1	
Week 2	Mon 01/15	<b>MLK day</b>	////////////////////	Friday 01/19 Lab 1: Intro to cooking (Group 2)
	Wed 01/17	Ch 1: The Science of Food and Cooking: Macromolecules	1	
	Fri 01/19	Ch 1: The Science of Food and Cooking: Macromolecules	1	
Week 3	Mon 01/22	Ch 1: The Science of Food and Cooking: Macromolecules	1 <i>Learning Activity 1 assigned</i>	Friday 01/26 Lab 2: Cheese (Group 1)
	Wed 01/24	Ch 1: The Science of Food and Cooking: Macromolecules	1	
	Fri 01/26	Ch 1: The Science of Food and Cooking: Macromolecules	1	
	Mon 01/29	Ch 1: The Science of Food and Cooking: Macromolecules	1 <i>Learning Activity 1 due</i>	Friday 02/02

Week 4	Wed 01/31	Ch 1: The Science of Food and Cooking: Macromolecules	1	Lab 2: Cheese (Group 2)
	Fri 02/02	Ch 1: The Science of Food and Cooking: Macromolecules	1	
Week 5	Mon 02/05	Ch 1: The Science of Food and Cooking: Macromolecules	1	Friday 02/09 Lab 3: Caramel (Group 1)
	Wed 02/07	Ch 1: The Science of Food and Cooking: Macromolecules	////////////////////	
	Fri 02/09	Ch 1: The Science of Food and Cooking: Macromolecules. Review session	1	
Week 6	Mon 02/12	<b>EXAM 1</b> (Chapters 1)	////////////////////	Friday 02/16 Lab 3: Caramel (Group 2)
	Wed 02/14	Ch 3: Milk and Ice Cream	3	
	Fri 02/16	Ch 3: Milk and Ice Cream	3	
Week 7	Mon 02/18	Ch 3: Milk and Ice Cream	3	Friday 02/23 Lab 4: Ice Cream (Group 1)
	Wed 02/21	Ch 3: Milk and Ice Cream	5	
	Fri 02/23	Ch 5: Cheese, Yogurt and Sour Cream	5	
Week 8	Mon 02/26	Ch 5: Cheese, Yogurt and Sour Cream	5	Friday 03/01 Lab 4: Ice Cream (Group 2)
	Wed 02/28	Ch 5: Cheese, Yogurt and Sour Cream	5	
	Fri 03/01	Ch 5: Cheese, Yogurt and Sour Cream	5	
	03/04 – 03/08	<b>SPRING BREAK</b>	////////////////////	No Lab
Week 09	Mon 03/11	Ch 6: Browning	6 <i>Learning Activity 2 assigned</i>	Friday 03/15 Lab 5: Browning (Group 1+2)
	Wed 03/13	Ch 6: Browning	6	
	Fri 03/15	Ch 6: Browning/Review session	6	
Week 10	Mon 03/18	<b>EXAM 2</b> (Chapters 3, 5, 6)	//////////////////// <i>Learning Activity 2 due</i>	Friday 03/22 Lab 6: Meat lab (Group 1)
	Wed 03/20	Ch 8: Meat and Fish	8	
	Fri 03/22	Ch 8: Meat and Fish	8	
Week 11	Mon 03/25	Ch 8: Meat and Fish	8	Friday 03/29 No Lab (Easter)
	Wed 03/27	Ch 8: Meat and Fish	8	
	Fri 03/29	<b>Easter Recess</b>	////////////////////	
Week 12	Mon 04/01	<b>Easter Recess</b>	9 <i>Learning Activity 3 assigned</i>	Friday 04/05 Lab 6: Meat Lab
	Wed 04/03	Ch 9: Eggs, Custard and Foam	9	

	Fri 04/05	Ch 9: Eggs, Custard and Foam	9	(Group 2)
Week 13	Mon 04/08	Ch 9: Eggs, Custard and Foam	9	Friday 04/12 Lab 7; Eggs Lab (Group 1)
	Wed 04/10	Ch 9: Eggs, Custard and Foam	<i>Learning Activity 3 due</i>	
	Fri 04/12	Ch 10: Bread, Cakes and Pastry	10	
Week 14	Mon 04/15	Ch 10: Bread, Cakes and Pastry	10	Friday 04/19 No Lab
	Wed 04/17	Ch 10: Bread, Cakes and Pastry	10	
	Fri 04/19	Ch 10: Bread, Cakes and Pastry ( <i>asynchronous, no class at LSCC</i> )	10	
Week 15	Mon 04/20	<b>EXAM 3</b> (Chapters 8, 9, 10)	////////////////////	Friday 04/26 Lab 7; Eggs Lab (Group 2)
	Wed 04/24	Ch 12: Alcohol	12	
	Fri 04/26	Review session	////////////////////	
	<b>Wed 05/01</b>	<b>FINAL EXAM 7.30 am-10 am</b>	////////////////////	LSCC 204B

### PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

### PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

### SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If you have questions, a desire to meet with the chaplain or have prayer requests you can contact your professor or the Office of Spiritual Life and Formation.

### STATE AUTHORIZATION POLICY

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a

student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on State Authorization to view which states allow online (distance education) outside of California.

Catalog. See Academic Policies for definitions of kinds of academic dishonesty and for further policy information.

### **ARTIFICIAL INTELLIGENCE POLICY**

You are allowed to use Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

### **PLNU ACADEMIC ACCOMMODATION POLICY**

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

### **LANGUAGE AND BELONGING**

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

You may report an incident(s) using the Bias Incident Reporting Form.

### **SEXUAL MISCONDUCT AND DISCRIMINATION**

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at [pointloma.edu/Title-IX](http://pointloma.edu/Title-IX). Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at [counselingservices@pointloma.edu](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix](http://pointloma.edu/title-ix).

### **PLNU ATTENDANCE AND PARTICIPATION POLICY**

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university withdrawal date or, after that date, receive an “F” grade.

### **LOMA WRITING CENTER**

The Loma Writing Center exists to help all members of the PLNU community cultivate transferable writing skills to engage their academic, professional, personal, and spiritual communities. We work toward this goal by conducting one-on-one consultation sessions, supporting writing education across the PLNU community, and participating in ongoing writing center research.

Getting feedback from the Loma Writing Center while you’re in the process of working on an assignment is a great way to improve the quality of your writing and develop as a writer. You are encouraged to talk with a trained writing consultant about getting started on an assignment, organizing your ideas, finding and citing sources, revising, editing for grammar and polishing final drafts, and more. For information about how to make in-person or online appointments, see [Loma Writing Center webpage](#) or visit the Loma Writer Center on the first floor of the Ryan Library, room 221.