



**FLORIDA POLYTECHNIC
UNIVERSITY**

General Education Syllabi -- Fall 2022

Courses

CHM 2045 - Chemistry 1 + Lab EVR
1001 - Environmental Science

Instructions

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To search, click CTRL-F for find. A dialogue box will open in the top right-hand corner of the screen.



CHM 2045 – Fall Semester 2022

Chemistry 1 – Lecture

POSTED JULY 5th, 2022 | SUBJECT TO CHANGE

Instructor: Dr. Tracy Olin
Email: tolin@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Instructor: Dr. Ajeet Kaushik
Email: akaushik@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Instructor: Dr, XXX
Email: akaushik@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Lecture Times: Section 1: MWF 1:00-1:50
Section 2: TR 11:00-12:15
Section 3: MWF 9:00-9:50
Section 4: MWF 12:00-12:50
Section 5: MWF 11:00-11:50

Required Materials

Textbook/Homework: Brown, T.E.; LeMay, H.E.; Bursten, B.E.; Murphy, C.; Woodward, P.; Stoltzfus, M.E. Chemistry: The Central Science (15th edition); Pearson: New York, NY. ISBN: 9780137542970

Other Materials:

- Scientific Calculator capable of scientific notation (Texas Instruments TI-30Xa recommended)
- Access to the course Canvas LMS website and University Email System

Optional Materials

Open Source: External Source: Contributors and Attributions; This text is designed for the two-semester general chemistry course. For many students, this course provides the foundation to a career in chemistry, while for others, this may be their only college-level science course.
[https://chem.libretexts.org/Bookshelves/General_Chemistry/Chemistry_\(OpenSTAX\)](https://chem.libretexts.org/Bookshelves/General_Chemistry/Chemistry_(OpenSTAX))

Catalog Course Description: This course introduces the principles of chemistry and their applications based upon the study of physical and chemical properties of the elements. Topics covered in this class

includes stoichiometry, atomic and molecular structure, the states of matter, chemical bonding, thermochemistry, and gas laws.

Co-Requisite: CHM 2045L – Chemistry 1 Laboratory

Communication: Any email written to the instructor must have the following:

- School email: Use your academic account (.edu email)
- Subject: nature of the issue clearly mentioned
- Addressing: must have a professional greeting
- Identify yourself: must state your full name, course, and section number in the first line, (makes it easy to recognize you) and then the content of the issue written clearly and concisely.
- Signing off: must end with a formal acknowledgement.
- Follow up: Instructors typically answer emails within 24-48 hours, Monday-Friday, but please follow up if you do not hear back by this timeframe.

Course Learning Objectives:

At the end of this course, you should be able to:

1. Apply appropriate scientific methods (unit/dimensional analysis/vocabulary/etc.) in problem solving exercises.
2. To enable students to interpret chemical equations make chemical calculations.
3. Relate atomic and molecular structure to explain chemical and physical properties of elements.
4. Understand types of chemical bonding, Lewis Structures and apply the knowledge to predict molecular geometry of the molecules
5. Correlate basic chemistry to explore the fundamental of advanced technologies useful for real-life problems of societal, global, environmental, and economic consequence.
6. Making students aware to understand and execute processes and methods solve the issues of engineering required to for understanding the improving the performance.
7. Active engagement needed for professional success through cultivating collaboration with multidisciplinary teams-based approaches which will help to improve technical knowledge, communication abilities, and leadership skills.

Course Learning Outcomes:

Students who pass CHM-1 are expected to demonstrate:

1. Ability to understand the concept of engineering systematically based on chemistry (formula, equations, units, scientific vocabulary, and process).
2. Use stoichiometric methods to convert between mass, moles, and concentration.
3. Relate the quantum numbers and electron configurations of atoms to the periodicity in chemical and physical properties of elements as represented in the periodic table.
4. Predict the bonding and resulting geometry of atoms in molecules.
5. Determine enthalpy change in chemical reactions-First Law of Thermodynamics.
6. Employ the kinetic theory of gases and the ideal gas laws to determine pressure, volume, temperature, and/or amount of a gas.
7. Ability to execute lecture learning to develop and conduct appropriate experiments, analyze, and interpret data, and use engineering judgment to draw conclusions.
8. An ability to correlate the knowledge of chemistry with the improved performance emerging smart materials, sensing, environmental safety & monitoring, and healthcare.
9. An ability to communicate effectively with a range of audiences.

Alignment with Program Outcomes: This course supports General Education competency for scientific reasoning. Program Learning Outcomes and General Education Competencies may be found in the Academic Catalog (<http://catalog.floridapoly.edu/>). Additionally, outcomes may be aligned with level of difficulty per Bloom's taxonomy (see University's Institutional Effectiveness Manual for Academic programs).

SLO Table

Course Learning Outcome	Learning Level (e.g. Bloom's, Anderson/ Krathwohl; Rogers Hatfield (ABET Assessment Example)	Program Learning Outcome (ABET, GenEd, Other)
Learning and exploring chemistry via critical thinking based on Socio-Chemistry (problem-oriented approach to chemistry teaching)	Understand Categorizing Predicting Compare and contrast	1-a
Exploring chemistry as engineering based on mathematical approach and applications	Apply Implementing	1-e, 1-k
Ability explore chemistry in application aspects for example, Redox chemistry, Thermal energy changes involved, etc.	Analyze Differentiating Classifying Identifying	2-c, 2-k
Ability to discuss chemistry, understanding of theories in the manner problem solving approach	Evaluate Predict Judging	3-g, 4-f, and 5-d
Applying knowledge of lectures in laboratory experiments	Create Hypothesizing Coordinating	6-b, 7-i
Introducing analytical aspects in lectures to understand examples	Application	6-k
Motivating students for upper-level courses, advanced training, and growing up as a scientist		5-d, 7-i

Academic Support Services

Inclusive Learning Statement: Your success in this class is important to us. We will all need accommodations because we all learn differently. If there are aspects of this course that prevent you from learning or exclude you, please let us know as soon as possible. Together we will develop strategies to meet both your needs and the requirements of the course.

You are encouraged to visit the [Office of Disability Services](#) to determine how you can improve your learning as well. If you need official accommodations, you have a right to have these met. There are also a range of resources on campus, including the Academic Success Center and Writing Services described below. See the [Florida Poly Disability Services policy](#) or contact disabilityservices@floridapoly.edu for more details.

Academic Success Center (ASC): The [Academic Success Center](#) provides essential services that directly support the student experience at Florida Polytechnic University. Located on the first floor of the Innovation, Science & Technology Building in room 1019 and at ASC East in Phase 2 Dorms, Academic Support Services is a hub that connects the community with the resources needed to succeed academically. This includes tutors in all-Natural Sciences Courses.

The center is staffed by success coaches who provide academic coaching on a variety of topics, including time management, test preparation and test-taking skills. Success coaches also provide academic guidance and help students manage their schedule and academic progress. Additionally, coaches lead career development initiatives on campus and are available to review resumes and conduct mock interviews. Students may direct questions to success@floridapoly.edu

Library: Students can access the electronic resources in the [Florida Polytechnic University Library](#) through the [Pulse](#) student portal and in Canvas, on and off campus. Students may direct questions to the Academic Success Center or by email: library@floridapoly.edu

The Florida Polytechnic University Library provides specialized resources and learning opportunities for students, faculty, and staff to successfully work with, interpret, and utilize information. The Library's core online collection features full-text journals as well as over 105,000 electronic books and other content covering all academic subject areas. As a member of the State University System of Florida, Florida Polytechnic University students can search and request materials from other state university libraries.

Writing Services: [Writing Services](#) offers a full spectrum of writing support for Florida Poly students, including assistance with:

- Brainstorming
- Organization
- Revision Strategies

Care Services on Campus: Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the [CARE manager](#) for support at care@floridapoly.edu. Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

Counseling Services: [Counseling Services at Florida Polytechnic University](#) are designed to support students in maintaining their overall well-being and accomplishing their educational goals. Counseling services are tailored on an individual basis to assist students with a variety of personal concerns. Campus counseling services are available on a short-term basis. Students who require long-term services will be referred for counseling within the community. Services are offered primarily on an appointment basis, although walk-in services are available in cases of emergency.

Students also have access to 24/7 counseling support through BayCare by calling 800.878.5470.

Additional resources available to students, faculty, and Staff:

- National Suicide Prevention Lifeline 800.273.8255
- Peace River Center Mobile Crisis Response Team 800.627.5906 or 863.519.3744
- Lakeland Regional's Crisis Hotline 863.687.1112

Course Policies

Attendance Policy: (see also [University Policy](#))-Read Carefully

For all in-person class meetings, attendance will be taken at the beginning of the class period.

Attendance is worth 5% of your overall grade in this course.

- More than two unexcused absences will be considered excessive.
- Related grading will be added to your cumulative exam point for your attendance.
- Students should notify the instructor in case of unavoidable absence. It is the student's responsibility to give the instructor notice prior to any anticipated absence, and within a reasonable time after an unanticipated absence, ordinarily by the next scheduled class meeting. A supporting document for the absence is required.
- See the list of excused absences listed below "Covid-19" for University-specified excused absences and Covid-19 leniencies.
- Be accountable and responsible for identifying and completing missed or make-up work in a timely manner.
- Students whose absences exceed those allowed by the course syllabus may be administratively withdrawn at the discretion of the instructor. The consequence of missing more than 10% of scheduled class meetings with or without a valid excuse is defined in the university catalogue. Missing more than 10% will affect your overall grade for the course because you will have missed quizzes and graded class activities. Also, you must plan to be in class on time. Arriving 15 minutes or more after the scheduled meeting time deems a student absent for the day.

Excused Absences: Students with excused absence can make up the missed work within a reasonable (specified) time without any reduction in the assigned work or final course grade as a direct result of the absence. Any points, if given, that are based on attendance typically are not awarded when a student is absent. Any of the following reasons are only considered for excused absences from class: religious observances of student's faith, legal responsibilities (jury duty, court obligations), military obligations, university-sponsored events, death or serious illness within the student's immediate family, or student's own illness, or other reasonable circumstances.

Excused Absences due to COVID-19 and Attendance Exception: In addition to the standard excused absence reasons given above, legitimate, and difficult to document reasons for missing classes will be considered for the excused absence list. Some of these excused absence reasons are,

- Experiencing common COVID-19 symptoms.
- Exposure to COVID-19 and need to be quarantined.
- COVID-19 positive and are required to isolate.
- Family illness.
- Increased anxiety and mental health issues.
- Be in a CDC-identified high-risk category.

Students, of course, are **responsible** for communicating their situation to the course instructor in a timely manner and utilizing CARE services for support (given in the CARE services section below). The attendance rules will be flexibly handled by your instructor for students as a direct result of concerns with

COVID-19. Therefore, the **attendance standards and exceptions** will be handled by your course instructor on a *case-by-case basis* if this absence is due to COVID-19. Based on your specific situation, your course instructor may resolve the issues using their capacity or if necessary, after consulting with other department colleagues who are teaching the same course, or the department chair, or the division director, or student affairs, or the Provost's Office.

Students Feeling Sick:

I am a student; what should I do if I think I may have COVID-19?

Students who are showing symptoms or who have been exposed to COVID-19 are expected to stay in their residences (at home or in their dorm rooms) and immediately notify the FL Poly CARE manager at care@floridapoly.edu. The CARE Manager will work with each student to triage their individual situation and the CARE Manager will notify faculty of students who are not attending courses due to COVID-19 symptoms.

Class Participation: In-class assignments will count for 5% of your overall grade in this course. You are expected to attend each class session and actively participate in class assignments and activities. You are responsible for all class information whether you are in attendance or not. Disruptive behavior or disrespectful behavior is not permitted and will result in disciplinary action or dismissal from the course.

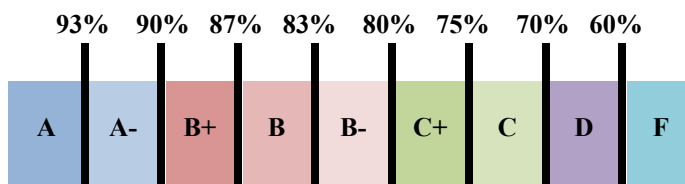
Student Responsibility: Each student will receive this syllabus and additional course information during the first lecture period. It is then the student's responsibility to read over this material, become familiar with the course content, such as procedures and grading. Additional copies of the syllabus can be downloaded from the course Canvas site or obtained from the instructor. Students are also responsible for any announcements that are made during the lecture, via email or on our Canvas site. If an absence occurs, it is the student's responsibility to obtain lecture notes, announcements, etc. from another student or contact the instructor. It is also advised that students check their Florida Poly email regularly for any course announcements that may be made such as severe weather adjustments, change in the class schedule, etc.

In short, students are expected to take full responsibility for their learning and one way that is demonstrated is by rigorous attendance and participation in class.

Grading Scale: (See also [University Grading Policy](#)).

A conventional rounding procedure will be applied to the nearest one. For example, a score between 92.5% and 92.9% will be rounded up to 93.0% and the letter grade will be an A. A score between 92.1% and 92.4% will be rounded down to 92.0% and the letter grade will be an A-. The following grading scale will be used:

A	≥93
A-	≥90 and <93
B+	≥87 and <90
B	≥83 and <87
B-	≥80 and <83
C+	≥75 and <80
C	≥70 and <75
D	≥60 and <70
F	<60



Assignment/Evaluation Methods: Your grade will be determined by your performance in the following four categories:

1. **Homework:** There are two types of homework assignments that will count towards your grade:
 - a. Chapter Interactive model homework (H5P)
 - A file(s) associated with a specific chapter will be uploaded on canvas and students are expected to complete the task as per the due date and time.
 - Timely submission is recommended. Any delay in submission may be subject to a 10% per week score reduction.
 - In case of any technical difficulty, please contact:
Brennen Cannon
Instructional Designer/Canvas Administrator/Information Technology
bcannon@floridapoly.edu or at 863-874-8816
 - b. Chapter graded HW assignments
 - A file with questions will be available on Canvas. Students need to answer the questions on paper with an appropriate scientific explanation, detailed calculations, notes, and upload the completed file to the canvas assignment.
 - All the homework should be clear, presentable, and handwritten.
 - Any delay in submission may be subject to a 10% per week score reduction.
2. **In class performance and Quizzes:** Based on the content covered each week, a weekly quiz is administered during the class. Students who are absent the day the quiz is given will not be able to retake the missed quiz.
3. **Exams:** There will be 3 exams (each 75 minutes long) given during the semester at a scheduled day and time outside of regular class time. These exams may contain multiple-choice and/or free response questions. If an exam is missed for a valid reason, it is the responsibility of the student to supply the instructor with a valid excuse (doctor's statement, etc.) promptly after the missed exam.
4. **Final Exam:** The final exam will be cumulative and cannot be exempted. The final exam schedule can be found on the registrar's page on the university website. Be sure to check this schedule and the date for the final exam in this course before planning for break.

Rules for both Exams and the Final Exam:

- On the day of an exam, you are responsible for having your student I.D., a calculator with fresh batteries, and a pencil or pen. (Calculators with alphabetic keypads and laptop or palmtop computers are prohibited).
- Exams will consist of material from the lecture notes, textbook readings, class activities and class discussions.
- Exams will be planned according to university policies, depending on pandemic conditions.
- Exam dates will be announced one week prior to the proposed date.
- Guidelines and procedure of exams will also be announced timely.
- You are not allowed to leave the classroom and re-enter the room once an exam has been administered.
- If you are tardy to the exam, you will not be allowed any additional time to complete the exam. You will only have the time remaining to complete the exam.

Grade Breakdown:

Attendance, In-class Performance and Quizzes	5% of overall grade
Homework:	
Chapter Interactive model homework (H5P)	15% of overall grade
Chapter graded HW Assignments	10% of overall grade
Exams: (Three exams at 15% each)	45% of overall grade
Final Exam:	25% of overall grade
<hr/>	
Course Total:	100%

PLEASE NOTE: Students should keep all graded materials until after the final grade is submitted in case there are any disputes or discrepancies.

Grading Dispute: If you wish to dispute a score for an assignment or exam, you must describe the nature of the dispute in writing and communicate it through an email no later than one week after the score was received by the student. Scores outside of this window will be considered final.

Late Work: Students will be required to complete all homework and assignments within the allotted timeframe or by the due date. **Late work will result in a 10% penalty for each week late.** Class attendance is expected. Each student is responsible for all material covered in lectures, reading and homework assignments. A student who is absent is responsible for getting assignments from the instructor or a classmate. Absence from exams **without** a written excuse is not allowed and will result in an exam grade of **zero**. Any make up for the exams is at the discretion of the instructor. One absence with a written doctor's excuse is permitted. The final exam grade will be used as the grade for the missed exam. Absence from two exams is reason for dismissal from the course.

Additional Information and Assistance: During a 15-week semester, a student is considered to be a "full time" student if she/he is carrying 12 or more credits. This is full time because a student is expected to expend a minimum of 2 hours of effort per week on course work for **each** credit being taken. A student carrying 12 credits should be spending a minimum of 12 hours each week actually in class (*more* if there are labs!), PLUS another 24 (2 x 12) hours outside of class on course work. That's a minimum of 36 hours per week. Being a full time student **is** a full time job. This is a 4 credit class, therefore students should be spending a *minimum* of 8 hours per week on this course *outside of class*. Should you need additional help, there are tutors available for this course Also, please do not hesitate to come to my office hours or contact me if you are having trouble understanding concepts or working out problems.

Overall Course Goals:

- Think like a chemist.
- Explore fundamentals, reasoning, and applied aspects.
- Problem solving approach.

University Policies:

- **Covid-19 Statement:** Regardless of the mode of course delivery, all Florida Poly students are asked to make a [Campus Commitment](#) demonstrating respect and consideration for themselves or others, and for the people they care about. If you are experiencing any symptom(s) of COVID-19 outlined by the CDC, you must stay home or in your residence hall room and immediately contact the associate director of campus wellness management at **863-874-8599** or email care@floridapoly.edu.

Basic rules for in the classroom, IST, and Campus:

1. You may need a face-covering.
2. Leave the furniture on its correct floor markings, or if it is moved, please return it to those markings.
3. "Take-Two": Whenever possible, clean your space with a sanitizing wipe (take two) before you start and when you are finished with class.
4. Do not remove sanitizing wipes or hand sanitizers from their set locations—they are put there for everyone.
5. Follow directional signs throughout the buildings and respect appropriate social distancing.
6. Study hard and engage with all your courses!

Appendix 3.1. Spring 2021 Attendance (University Policy)

The student experience at Florida Poly must be rich in interactions between faculty and students and within student peer groups. To promote this experience, we have set expectations for Spring 2021 Attendance to provide students with on-campus access to learning and to support strong student engagement in academics and campus life. Students in Face-to Face, Low-Flex, C-courses, and Lab Courses are expected to attend classes on campus and in-person.

- **Reasonable Accommodations:** Florida Polytechnic University is committed to assisting students with disabilities and offering reasonable accommodations to those with documented eligibility. The Office of Disability Services (ODS) coordinates accommodations for students with disabilities in accordance with the ADA Amendments Act of 2008 (ADAAA), the Americans with Disabilities Act of 1990 (ADA), and Section 504 of the Rehabilitation Act of 1973. Reasonable accommodations are determined on an individual basis through an interactive process between you, ODS, and your instructor(s). If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course and communicate with your instructor about your approved accommodations at your earliest convenience. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):

DisabilityServices@floridapoly.edu

(863)874-8770

ASC East building

ODS website: www.floridapoly.edu > Student Affairs > Health Wellness > Disability Services

[Accommodations for Religious Observances, Practices and Beliefs](#)

Title IX: Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment,

sexual assault, dating violence, domestic violence and stalking. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. It is an educational goal that you feel able to share information related to your life experiences in classroom discussions and in one-on-one meetings. However, it is requirement for university employees to share information with the Title IX Coordinator regarding disclosure. However, please know that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University **Ombuds Office**, BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at **Peace River Center**, 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment.

Academic Integrity: All students must commit to the highest ethical standards in completion of all academic pursuits and endeavors: [Academic Integrity](#)

Lecture Schedule Fall 2022:

Below is the tentative schedule for the class. There may be some variation in the lecture content based on how quickly we are able to cover the material in the class. It is also possible that the exam dates may change slightly. Any changes to this schedule will be announced in class, and via canvas and/or email one week prior. Each student is responsible for following changes in dates or coverage, as announced in class.

Week of:	Reading	Topics	HW/Quizzes/Exams
Week 1 (8/23-8/26)	Syllabus, Ch. 1	Go over syllabus, Introduction of definitions, basic concepts, measurements and units, calculations, sig figs and uncertainty	
Week 2 (8/29-9/2)	Ch. 1,2	Dimensional analysis, atomic theory, structure, atomic symbols, isotopes	HW 1 due
LABOR DAY: NO CLASS ON MONDAY 9/5/22			
Week 3 (9/6-9/9)	Ch. 2	Atomic weights, The Periodic Table, molecules and ions, chemical formulas, polyatomic ions, naming compounds	HW 2 due
Week 4 (9/12-9/16)	Ch. 3	Balancing equations, formula weights, the mole concept, molar mass, molecular and empirical formulas	HW 3 due
Week 5 (9/19-9/23)	Ch. 3,4	Stoichiometry, limiting reactant and reaction yields, aqueous solutions, precipitation reactions	***EXAM 1 on Wednesday 9/21***
Week 6 (9/26-9/30)	Ch. 4	Redox, acid-base reactions, molarity and solution concentrations, dilution	HW 4 due
Week 7 (10/3-10/7)	Ch. 4,5	Titrations, energy, heat transfers, heat capacity/specific heat, enthalpy, enthalpy of reaction	HW 5 due
Week 8 (10/10-10/14)	Ch. 5	Thermochemical equations, calorimetry, Hess's law, formation enthalpy	HW 6 due
Week 9 (10/17-10/21)	Ch. 5,6	Bond enthalpy, EM radiation, frequency and wavelength, atomic emission spectra, quantum theory	HW 7 due
Week 10 (10/24-10/28)	Ch. 6	Electronic structure of atoms, Bohr model, quantum numbers and electron configurations, atomic orbitals	***EXAM 2 on Wednesday 10/26***

Week 11 (10/31-11/4)	Ch.7	Effective nuclear charge, periodic table trends, metal, nonmetals and metalloids, ionic and covalent bonding	HW 8 due
VETERNS DAY: NO CLASSES ON FRIDAY 11/11/22			
Week 12 (11/7-11/11)	Ch. 8	Octet Rule, Lewis symbols, ionic bonding, covalent bonding, bond polarity	HW 9 due
Week 13 (11/14-11/18)	Ch. 8	Formal charges, Lewis structures, resonance structures, octet exceptions	HW 10 due
THANKSGIVING BREAK: NO CLASSES WED – FRI, 11/23/22-11/25/22			
Week 14 (11/21-11/25)	Ch. 9	Molecular shapes, VSPER model, molecular polarity	***EXAM 4 on Wednesday 11/23***
Week 15 (11/28-12/2)	Ch. 9,10	Valence bond theory, orbital hybridization, multiple bonds, molecular orbital theory, gases	
LAST DAY OF CLASS IS WED 12/7/22. NO CLASSES THURS & FRI 12/8/22 & 12/9/22			
Week 15 (12/5-12/9)	Ch. 10	Gas laws, ideal gas law, partial pressure, Kinetic-Molecular theory, diffusion, real gases	
Finals Week (12/10, 12/12-12/15)		***FINAL EXAM: SEE FINAL EXAM SCHEDULE***	

Other Important Dates:

Last day to add/drop a class: Monday, August 29, 2022

Last day to withdraw: Tuesday, November 22, 2022

Last day of class: Wednesday, December 7, 2022

End of Semester: Friday, December 16, 2022

Disclaimer: The instructor reserves the right to alter this syllabus and exam dates as it becomes necessary to achieve the goals and objectives of this course. You will be made aware of any necessary changes in a timely manner. You are responsible for understanding the requirements of this course and course syllabus. If you have any questions, please do not hesitate to ask the professor.



CHM 2045L – Fall Semester 2022

Chemistry 1 – Lab

POSTED JULY 5th, 2022 | SUBJECT TO CHANGE

Instructor: Dr. Tracy Olin
Email: tolin@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Instructor: Dr. Ajeet Kaushik
Email: akaushik@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Instructor: Dr, XXX
Email: akaushik@floridapoly.edu
Office: XXX
Phone: XXX

Office Hours: TBA
*Also by appointment

Meeting Times:

Section 1:	T	10:00-11:50	ARC 2207
Section 2:	T	1:00-2:50	ARC 2207
Section 3:	T	3:00-4:50	IST-N/A
Section 4:	T	10:00-11:50	ARC 2209
Section 5:	W	1:00-2:50	ARC 2207
Section 6:	F	3:00-4:50	ARC 2207
Section 7:	R	8:00-9:50	ARC 2207
Section 8:	T	1:00-2:50	ARC 2209
Section 9:	W	1:00-2:50	ARC 2209
Section 10:	F	3:00-4:50	ARC 2209
Section 11:	R	8:00-9:50	ARC 2209

Required Materials

Lab Manual: Chemistry 2045L Chemistry Lab Manual, **Publisher:** Xanadu, **ISBN Number:** 9781975097080. Code for manual available from the Florida Polytechnic Online Bookstore (<https://floridapoly.edu/bookstore/index.php>).

Each week you must print the pre-lab assignment sheets, datasheets, and post-lab sheets for the correct experiment from the manual.

Other Materials:

- Safety goggles (university provided)
- Lab Coat (university provided)
- Gloves (university provided)
- Scientific Calculator capable of scientific notation (Texas Instruments TI-30Xa recommended)
- Access to the course Canvas LMS website and University Email System

Catalog Course Description: Students will participate in laboratory experiments designed to reflect the topics presented in CHM 2045.

Gordon Rule (6A-10.030): Y This course meets communication/writing-intensive requirements (W).

Communication: Any email written to the instructor must have the following:

- School email: Use your academic account (.edu email)
- Subject: nature of the issue clearly mentioned
- Addressing: must have a professional greeting
- Identify yourself: must state your full name, course, and section number in the first line, (makes it easy to recognize you) and then the content of the issue written clearly and concisely.
- Signing off: must end with a formal acknowledgement.
- Follow up: Instructors typically answer emails within 24-48 hours, Monday-Friday, but please follow up if you do not hear back by this timeframe.

Course Objectives:

1. Design and perform a chemistry experiment safely and systematically.
2. Understanding and follow laboratory work practices.
3. Demonstrate ability to generate systematic data.
4. Achieve professional success to analyze an experimental data correctly.
5. Achieve ability to articulate laboratory report based experimental outcomes using professional English, technical details, and scientific explanation.

Course Learning Outcomes:

1. Ability to understand the process of a chemical change.
2. Ability to demonstrate safe laboratory skills.
3. Learning-based ability to apply problem solving skills to perform any experiment which involve processing.
4. Ability to engage constructively and work in a team.
5. Ability to communicate and articulate a laboratory process report.
6. Ability to utilize scientific methodology including quantitative data analysis and interpretation.
7. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.
8. An ability to execute process-based learning to improve engineering processes involving surface science, materials science, analytics science, environmental science, and technology of sensors and biomedical applications.

Alignment with Program Outcomes: Students will demonstrate an understanding of the scientific method and will be able to:

1. Use the scientific method to explain and evaluate scientific observation, hypothesis, and experimentation.
2. Apply appropriate scientific methods in problem solving.

Course Learning Outcome	Learning Level (e.g., Bloom's, Anderson/ Krathwohl; Rogers/Hatfield (ABET Assessment Example)	Program Learning Outcome (ABET, GenEd, Other)
1. Demonstrate safe laboratory skills.	Remember	4-f
2. Apply problem solving skills to laboratory exercises.	Remember Understand Apply	6-b, 6-k
3. Effectively communicate in written laboratory reports.	Analyze Execute Evaluate Create	3-g
4. Utilize scientific methodology including quantitative data analysis and interpretation.	Remember Understand Analyze Execute Evaluate Create	1-a

Academic Support Resources

Inclusive Learning Statement: Your success in this class is important to us. We will all need accommodations because we all learn differently. If there are aspects of this course that prevent you from learning or exclude you, please let us know as soon as possible. Together we will develop strategies to meet both your needs and the requirements of the course.

You are encouraged to visit the [Office of Disability Services](#) to determine how you can improve your learning as well. If you need official accommodations, you have a right to have these met. There are also a range of resources on campus, including the Academic Success Center and Writing Services described below. See the [Florida Poly Disability Services policy](#) or contact disabilityservices@floridapoly.edu for more details.

Academic Success Center (ASC) The [Academic Success Center](#) provides essential services that directly support the student experience at Florida Polytechnic University. Located on the first floor of the Innovation, Science & Technology Building in room 1019 and at ASC East in Phase 2 Dorms, Academic Support Services is a hub that connects the community with the resources needed to succeed academically. This includes tutors in all the Natural Sciences Courses.

The center is staffed by success coaches who provide academic coaching on a variety of topics, including time management, test preparation and test-taking skills. Success coaches also provide academic guidance and help students manage their schedule and academic progress. Additionally, coaches lead career development initiatives on campus and are available to review resumes and conduct mock interviews. Students may direct questions to success@floridapoly.edu

Library: Students can access the electronic resources in the [Florida Polytechnic University Library](#) through the [Pulse](#) student portal and in Canvas, on and off campus. Students may direct questions to the Academic Success Center or by email: library@floridapoly.edu

The Florida Polytechnic University Library provides specialized resources and learning opportunities for students, faculty, and staff to successfully work with, interpret, and utilize information. The Library's core online collection features full-text journals as well as over 105,000 electronic books and other content covering all academic subject areas. As a member of the State University System of Florida, Florida Polytechnic University students can search and request materials from other state university libraries.

Writing Services: [Writing Services](#) offers a full spectrum of writing support for Florida Poly students, including assistance with:

- Understanding written assignment prompts
- Researching writing genres and specific topics
- Brainstorming
- Organization
- Revision Strategies
- Citation and Formatting
- Grammar and Punctuation
- Preparing Presentations and Visual Aides

Care Services on Campus

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the [CARE manager](#) for support at care@floridapoly.edu. Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

Counseling Services: [Counseling Services at Florida Polytechnic University](#) are designed to support students in maintaining their overall well-being and accomplishing their educational goals. Counseling services are tailored on an individual basis to assist students with a variety of personal concerns. Campus counseling services are available on a short-term basis. Students who require long-term services will be referred for counseling within the community. Services are offered primarily on an appointment basis, although walk-in services are available in cases of emergency.

Students also have access to 24/7 counseling support through BayCare by calling 800.878.5470.

Additional resources available to students, faculty, and Staff:

- National Suicide Prevention Lifeline 800.273.8255
- Peace River Center Mobile Crisis Response Team 800.627.5906 or 863.519.3744
- Lakeland Regional's Crisis Hotline 863.687.1112

Course Policies

Attendance Policy: (see also [University Policy](#))-Read Carefully

For all in-person class meetings, attendance will be taken at the beginning of the class period.

- Laboratory attendance is mandatory. Students should notify the instructor in case of unavoidable absence. It is the student's responsibility to give the instructor notice prior to any anticipated absence, and within a reasonable time after an unanticipated absence, ordinarily by the next scheduled class meeting. A supporting document for the absence is required.

- Students are expected to attend class. Students whose absences exceed one excused absence may be administratively withdrawn at the discretion of the instructor.
- Attendance is of worth 5 points per meeting for the lab.
- 5% of the attendance score is added to the cumulative total.
- Students are suggested to be on time to get better understanding and follow up of the work
- Any exceptions will be at the discretion of the instructor.
- Any exceptions to the attendance policy may be made on a case-by-case basis. This is a mutual understanding between student and instructor.

Excused Absences: Students with excused absence can make up the missed work within a reasonable (specified) time without any reduction in the assigned work or final course grade as a direct result of the absence. Any points, if given, that are based on attendance typically are not awarded when a student is absent. Any of the following reasons are only considered for excused absences from class: religious observances of student's faith, legal responsibilities (jury duty, court obligations), military obligations, university-sponsored events, death or serious illness within the student's immediate family, or student's own illness, or other reasonable circumstances.

Excused Absences due to COVID-19 and Attendance Exception: In addition to the standard excused absence reasons given above, legitimate, and difficult to document reasons for missing classes will be considered for the excused absence list. Some of these excused absence reasons are,

- Experiencing common COVID-19 symptoms.
- Exposure to COVID-19 and need to be quarantined.
- COVID-19 positive and are required to isolate.
- Family illness.
- Increased anxiety and mental health issues.
- Be in a CDC-identified high-risk category.

Students, of course, are **responsible** for communicating their situation to the course instructor in a timely manner and utilizing CARE services for support (given in the CARE services section below). The attendance rules will be flexibly handled by your instructor for students as a direct result of concerns with COVID-19. Therefore, the **attendance standards and exceptions** will be handled by your course instructor on a *case-by-case basis* if this absence is due to COVID-19. Based on your specific situation, your course instructor may resolve the issues using their capacity or if necessary, after consulting with other department colleagues who are teaching the same course, or the department chair, or the division director, or student affairs, or the Provost's Office.

Students Feeling Sick:

I am a student; what should I do if I think I may have COVID-19?

Students who are showing symptoms or who have been exposed to COVID-19 are expected to stay in their residences (at home or in their dorm rooms) and immediately notify the FL Poly CARE manager at care@floridapoly.edu. The CARE Manager will work with each student to triage their individual situation and the CARE Manager will notify faculty of students who are not attending courses due to COVID-19 symptoms.

Student Responsibility: Each student will receive this syllabus and additional course information during the first lecture period. It is then the student's responsibility to read over this material, become familiar with the course content, such as procedures and grading. Additional copies of the syllabus can be downloaded from the course Canvas site or obtained from the instructor. Students are also responsible for any announcements that are made during the lab, via email or on our Canvas site. It is also advised

that students check their Florida Poly email regularly for any course announcements that may be made such as severe weather adjustments, change in the class schedule, etc.

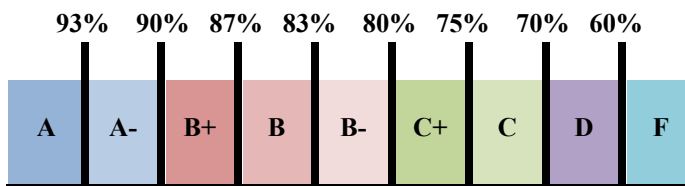
- Meet the requirements for all work in this course, including all attendance requirements mentioned in this syllabus.
- Know the due dates and submit the work by the due dates to earn full credit.
- Inform the course instructor of absences in advance if possible, or as soon as possible afterward. See the list of excused absences and Covid-19 for university-specified excused absences and Covid-19 leniencies listed in the attendance standards policy above.
- Possible Consequences of Attendance: Please follow the syllabus “Attendance Policy” section to avoid possible consequences of unexcused absences.

In short, students are expected to take full responsibility for their learning and one way that is demonstrated is by rigorous attendance and participation in class.

Grading Scale: (See also [University Grading Policy](#)).

A conventional rounding procedure will be applied to the nearest one. For example, a score between 92.5% and 92.9% will be rounded up to 93.0% and the letter grade will be an A. A score between 92.1% and 92.4% will be rounded down to 92.0% and the letter grade will be an A-. The following grading scale will be used:

A	≥93
A-	≥90 and <93
B+	≥87 and <90
B	≥83 and <87
B-	≥80 and <83
C+	≥75 and <80
C	≥70 and <75
D	≥60 and <70
F	<60



Assignment/Evaluation Methods: Your grade will be determined by your performance in the following categories:

Short Lab Reports: (Best 6 of 7, 7% each) (Combined pre- and post-lab grades)	45% of overall grade
Long Lab Reports: (2 at 15% each)	30% of overall grade
Final Exam	25% of overall grade
<hr/>	
Course Total:	100%

***PLEASE NOTE:** Students should keep all graded materials until after the final grade is submitted in case there are any disputes or discrepancies.*

Students are expected to complete Pre-lab and Post-lab exercises for each experiment. These exercises should be treated as individual assignments representing your own work. In other words, your data may be from the same set or “identical”, however, the way you summarize or explain concepts in your reports

cannot be the same or identical, as it is considered unethical. Any violation of the University's Academic Integrity policy may result in a failing grade for the course and dismissal from the University.

Grading Dispute: If you wish to dispute a score for an assignment or exam, you must describe the nature of the dispute in writing and communicate it through an email no later than one week after the score was received by the student. Scores outside of this window will be considered final.

Late Work: Late lab reports/unexcused absences will have a 10% grade penalty per week. (e.g., If your report is 4 weeks late, the maximum you can earn is 60% for that lab report/lab period). **After four weeks a zero score will be given for the respective work due to non-submission.**

Absence from lab without a written excuse is not allowed and will result in a lab grade of zero. (Refer to the Excused absence policy given above)

Safety Rules:

1. Food and drinks are not allowed into the lab at any time.
2. **Dress Code: Required**
 - Closed Toes Shoes
 - Long pants/skirts
 - Shirts or tops should have sleeves and should cover the torso.
 - Long hair tied back
3. Safety Goggles: You must wear your goggles over your eyes, not on your forehead or around your neck. You will lose 1 point from your laboratory work each time the instructor needs to remind you to put on the safety goggles.

Laboratory policies and Submissions:

All the course related work must be Submitted to Canvas Assignments

BEFORE COMING TO LAB:

1. Refer to the class schedule to ensure that you are preparing for the correct experiment. Thoroughly read the experimental discussion and procedure.
2. Make certain you have proper lab attire. If you show up with improper lab attire, you will have to leave the lab, and will be given an unexcused absence.
3. **Complete the pre-lab Assignment:** Pre-lab Assignments require a basic understanding of the chemical principles being observed in each experiment. Answering these questions requires you to read the background material provided in the first pages of the experiment. Additionally, it may be helpful to read relevant material in your lecture textbook.
 - The pre-Lab ASSIGNMENT for the experiment is due at the beginning of the class (canvas assignment). And is worth 10 points.
 - Full name, Date and section number must be written clearly.
 - All the work of the pre-lab should be clear, presentable, and handwritten in ink.
 - All calculations must be written in the spaces provided and answers reported to the correct number of significant figures. Your work must be clearly shown to receive full credit for the answers. All data must be recorded in ink (no pencils or correcting tape). Data recorded in pencil and/or with correction tape will not be graded and you will not receive any credit for your work.

- **You must upload the Pre-lab work to respective assignment in canvas before the start of your lab period.**
- **Late pre-lab submitted within 24-48 hours will get 30% of the grade. After 48 hours, no credit will be given.**

DURING THE LAB CLASS: Experimental work and Data collection

- A pre-lab discussion (if needed) is provided which includes any changes or modifications in the lab procedure, special safety instructions, and tips which may make your experiment run more smoothly.
- Record the unknown number (if applicable), begin the experiment, recording all the data IN INK in your data pages from the LAB MANUAL using units, proper significant digits, etc.
- Full name, Date and section number must be written clearly on the data pages.
- All data must be recorded in ink (no pencils or correcting tape). Data recorded in pencil and/or with correction tape will not be graded and you will not receive any points for the data page.
- Do not write data on a separate sheet of paper. Scrap paper is not acceptable for the recorded data.
- Data sheets should be checked by your instructor before you leave the laboratory.

AFTER THE EXPERIMENT IS COMPLETED: Data and Calculations:

- Data pages along with completed calculations and post lab questions are worth 70 points combined.
- A sample calculation should be shown for each type of calculation performed in the experiment (as directed by the instructor). Calculations may be shown on the Data Page if there is space available or on a separate sheet of paper. All measurements must include units and be clearly labeled.
- All calculations must be done with detailed work in ink (no pencils or correcting tape) and the answers must be reported with proper significant digits.
- Submit the data pages for that experiment showing all data and detailed calculations, etc. to the respective assignment in canvas by the due date.

General rubric of each Experiment -Short Lab Reports: total 100 points (Combined Pre-lab, Data collection, and Post-Lab work)

Pre-Lab	10 points
Data collected/calculations/graphs etc.	35 points
Post-lab assignments questions answered with full work	35 points
Participation/following lab rules	20 points
<hr/>	
Short Lab-Report Total:	100 points

PLEASE NOTE: points may be redistributed between the data, and post lab assignment work based on the work involved. In case of any doubt and query, please contact ONLY YOUR INSTRUTOR.

LAB FINAL EXAM: For all sections, the projected lab final exam will be during dates specified by the Registrar. (Details will be announced later in the semester)

University Policies:

- **Covid-19 Statement:** Regardless of the mode of course delivery, all Florida Poly students are asked to make a [Campus Commitment](#) demonstrating respect and consideration for themselves or others, and for the people they care about. If you are experiencing any symptom(s) of COVID-19 outlined by the CDC, you must stay home or in your residence hall room and immediately contact the associate director of campus wellness management at **863-874-8599** or email care@floridapoly.edu.

Basic rules for in the classroom, IST, and Campus:

1. You may need a face-covering.
2. Leave the furniture on its correct floor markings, or if it is moved, please return it to those markings.
3. "Take-Two": Whenever possible, clean your space with a sanitizing wipe (take two) before you start and when you are finished with class.
4. Do not remove sanitizing wipes or hand sanitizers from their set locations—they are put there for everyone.
5. Follow directional signs throughout the buildings and respect appropriate social distancing.
6. Study hard and engage with all your courses!

Appendix 3.1. Spring 2021 Attendance (University Policy)

The student experience at Florida Poly must be rich in interactions between faculty and students and within student peer groups. To promote this experience, we have set expectations for Spring 2021 Attendance to provide students with on-campus access to learning and to support strong student engagement in academics and campus life. Students in Face-to Face, Low-Flex, C-courses, and Lab Courses are expected to attend classes on campus and in-person.

- **Reasonable Accommodations:** Florida Polytechnic University is committed to assisting students with disabilities and offering reasonable accommodations to those with documented eligibility. The Office of Disability Services (ODS) coordinates accommodations for students with disabilities in accordance with the ADA Amendments Act of 2008 (ADAAA), the Americans with Disabilities Act of 1990 (ADA), and Section 504 of the Rehabilitation Act of 1973. Reasonable accommodations are determined on an individual basis through an interactive process between you, ODS, and your instructor(s). If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course and communicate with your instructor about your approved accommodations at your earliest convenience. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):

DisabilityServices@floridapoly.edu

(863)874-8770

ASC East building

ODS website: www.floridapoly.edu > Student Affairs > Health Wellness > Disability Services

[Accommodations for Religious Observances, Practices and Beliefs](#)

Title IX: Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. It is an educational goal that you feel able to share information related to your life experiences in classroom discussions and in one-on-one meetings. However, it is requirement for university employees to share information with the Title IX Coordinator regarding disclosure. However, please know that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University **Ombuds Office**, BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at **Peace River Center**, 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment.

Academic Integrity: All students must commit to the highest ethical standards in completion of all academic pursuits and endeavors: [Academic Integrity](#)

Lab Schedule Fall 2022:

Below is the tentative schedule for the class.

Disclosure: Students should pay sincere attention to the **dates** and **assignment due dates** on this schedule, so that you are prepared properly for the class meetings and assignment submissions.

- FOR LAB EXPERIMENTS: The experiment number listed here might be different in the recommended manual. In this case students are requested to **follow experiment name** for further follow up.
- All Pre-lab assignments, data sheets, post-lab assignments and lab reports will be submitted to the corresponding assignments in canvas.

Dates	Schedule of Lab Experiments	Lab # in Online Manual	Assignment (Due at the beginning of the class)
Week 1	<ul style="list-style-type: none">• Check-in and Lab Safety Training• Mandatory Online Safety Training and Safety Quiz	Experiment 0	- Complete: Online Safety Training and Safety Quiz prior to the start of Week 2 *** Students may not work in the laboratory until they have viewed the Lab Safety video and passed (≥80%) the Safety Quiz ***
Week 2	Glassware and Uncertainty	Not in manual (Worksheet posted on Canvas)	- Bring the Signed copy of the Lab Safety agreement and submit in person (hard copy)

			-Submit the pre-lab work for Glassware and uncertainty
Week 3	Labor Day No Lab Classes this week		
Week 4	Identifying Materials by Density	Experiment 1	-Submit Data/post lab –for Glassware and uncertainty -Submit the pre-lab work for Exp. 1
Week 5	Determining the Limiting Reagent and Theoretical Yield (Long lab report)	Experiment 3 Part A	- Submit Data/post lab work –Exp. 1 - Submit the pre-lab work Exp. 3
Week 6	Limiting Reagent Lab (Long lab report)	Experiment 3 Part B	- Complete the pre-lab work Exp. 3
Week 7	Stoichiometry Concept Discussion and Making a Stock Solution (Dilution concept)	Experiment 5	- Submit Long Lab Report and corresponding Data Sheets for Experiment 3 - Submit the pre-lab work Exp. 5
Week 8	Acid-base Titration 1 (Long lab report)	Experiment 6 Part A	- Submit Data/post lab work–Exp. 5 - Submit the pre-lab work Exp. 6
Week 9	Acid-base Titration 2 (Long lab report)	Experiment 6 Part B	-Complete the pre-lab work Exp. 6
Week 10	Determination of the Enthalpy of Combustion: Magnesium	Experiment 9	-Submit Long Lab Report and corresponding Data sheets for Experiment 6 - Submit the pre-lab work Exp. 9
Week 11	Atomic Line Spectra	Experiment 2	- Submit Data/post lab work - Exp. 9 - Submit the pre-lab work Exp. 2

Week 12	Veteran's Day No Lab Classes this week		
Week 13	VSEPR Theory	Experiment 7	- Submit Long Lab Report and corresponding Data sheets for Experiment 6 - Submit the pre-lab work Exp. 7
Week 14	Thanksgiving Break No Lab Classes this week		
Week 15	Calculating the Molar Volume of Carbon Dioxide	Experiment 4	- Submit Long Lab Report and corresponding Data sheets for Experiment 6 - Submit the pre-lab work Exp.4
Week 16	M-W of Finals as per Registrar – In Person		- Submit Data/post lab work – Exp. 9
	Th-F Reading Days - No Classes		

Other Important Dates:

Last day to add/drop a class: Monday, August 29, 2022

Last day to withdraw: Tuesday, November 22, 2022

Last day of class: Wednesday, December 7, 2022

End of Semester: Friday, December 16, 2022

Syllabus: EVR 1001 Environmental Science

Fall semester 2022

POSTED July 5, 2022
SUBJECT TO CHANGE

Course Information

- **Course Number and Title:** EVR 1001 Environmental Science
- **Credit Hours:** 3 (3 lecture)
- **Current Academic Term:** Fall 2022

Course Offerings and Instructors

- **MWF 9:00 – 9:50 AM – Dr. Xiaofan Xu**

Course Details

- **Course Modality:** The learning sequence is as follows
 - Prepare for classes
 - Attend lecture classes and participate in active learning
 - Demonstrate skill acquisition by completing after-class exercises (homework)
 - Practice self-learning through debate & defend sessions
 - Evaluate learning outcomes by exams
- **Official Catalog Course Description:** From the perspective of sustainability, linking humans and the environment through introducing interactions of population, ecosystems, biodiversity, resources, climate, pollution, and environmental management.
 - **Course Pre and/or Co-Requisites:** No
 - **Communication/Computation Skills Requirement (6A-10.030):** No
- **Required Texts:** *Environmental Science*, 16th edition by G. Tyler Miller & Scott Spoolman, Cengage: Boston, MA, 2018, ISBN: 978-1337569613.
- **Equipment and Materials:** Canvas, Microsoft Office, calculator, FL Poly email
- **Course Objectives:** The objective of this course is to provide an introduction to an interdisciplinary concept and approach exploring the environment that are comprised of both human and non-human elements. Students will be introduced to understand the physical, chemical, and biological principles underlying today's global environmental problems. Environmental topics include population, ecosystems, biodiversity, resources, climate, pollution, and environmental management. Emphasis will be placed on sustainable development and human influences in the environment.
- **Course Learning Outcomes:**
Students who successfully complete this course should be able to:
 - a) Remembering: *Recognize* common environmental pollutants from human activities and *identify* their effects on the environment;
 - b) Understanding: *Explain* how the ecosystems provide humanity and biodiversity with a diverse array of ecological services;
 - c) Applying: *Apply* interdisciplinary approaches to evaluating and proposing solutions for environmental problems, taking into account the natural, social, technological, and political constraints;
 - d) Analyzing: *Differentiate* between non-renewable, exhaustible, and inexhaustible material and energy resources, the physical and biological processes through which they are created, and associated environmental constraints;
 - e) Evaluating: *Discuss* the complex and diverse relationships between humans and the environment from local to global scales and *appraise* environmental impacts of behaviors, choices, and activities in students' personal lives;

- f) Overall: Clearly *communicate* related concepts as they apply to current environmental issues through careful and organized work.

- **Alignment with Program Outcomes:**

Course Learning Outcome	Learning Level (Bloom's / ABET Assessment Example)	Program Learning Outcome (ABET, GenEd, Other)
a) Students will <i>recognize</i> common environmental pollutants from human activities and <i>identify</i> their effects on the environment.	Knowledge – ability to recall previously learned material ABET Assessment – homework, exams	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
b) Students will <i>explain</i> how the ecosystems provide humanity and biodiversity with a diverse array of ecological services.	Knowledge – ability to recall previously learned material ABET Assessment – homework, exams	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
c) Students will <i>apply</i> interdisciplinary approaches to evaluating and proposing solutions for environmental problems, taking into account the natural, social, technological, and political constraints.	Application – ability to use learned material in new situations. ABET Assessment – homework, debate and defend	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
d) Students will <i>differentiate</i> between non-renewable, exhaustible, and inexhaustible material and energy resources, the physical and biological processes through which they are created, and associated environmental constraints.	Comprehension – ability to grasp meaning, explain, and restate ideas ABET Assessment – homework, exams	ABET 7 – an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
e) Students will <i>discuss</i> the complex and diverse relationships between humans and the environment from local to global scales and <i>appraise</i> environmental impacts of behaviors, choices, and activities in students' personal lives.	Comprehension – ability to grasp meaning, explain, and restate ideas ABET Assessment – homework, debate and defend	ABET 7 – an ability to acquire and apply new knowledge as needed, using appropriate learning strategies. ABET 4 – an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
f) Students will clearly <i>communicate</i> related concepts as they apply to current environmental issues through careful and organized work.	Application – ability to use learned material in new situations. ABET Assessment – debate and defend	ABET 3 – an ability to communicate effectively with a range of audiences. ABET 5 – an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

Academic Support Resources

- **Library:** Students can access the Florida Polytechnic University Library through the University website and [Canvas](#), on and off campus. Students may direct questions to Academic Success Center success@floridapoly.edu or by email, library@floridapoly.edu.
- **ASC:** The Academic Success Center, located in the IST and at ASC East, provides a range of services. Students may direct questions to success@floridapoly.edu.

Course Policies

Attendance

- Students in **face-to-face (this includes labs and C-courses)** courses are expected “to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor” (University Policy, FPU-5.0010AP). **Attendance is mandatory.**
- It is likely that diligent attendance in class lectures and devoting significant time out of class to the subject material will improve your understanding of the course material and the assigned reading material, and, hence, improve your semester grade.
- If you have to miss class, it is recommended to inform the instructor your absence in advance.
- Students must not engage in behavior that distracts the instructor or that disrupts the class for others in attendance:
 - You cannot have a mobile phone out during class.
 - Laptop computers can only be used only for taking notes, not for e-mail, web browsing, or any other activity that might distract your learning of the class material or your classmates and the instructor.
 - Unless you are working on an in-class group activity, please do not speak with your classmates, read the newspaper, work on homework for other courses, or engage in any other unprofessional behavior that is distracting to your classmates or instructor.

Students Feeling Sick

I am a student; what should I do if I think I may have COVID-19?

Students who are showing symptoms or who have been exposed to COVID-19 are expected to stay in their residences (at home or in their dorm rooms) and immediately notify the FL Poly CARE manager at care@floridapoly.edu. The CARE Manager will work with each student to triage their individual situation and the CARE Manager will notify faculty of students who are not attending courses due to COVID-19 symptoms.

Late Work/Make-up work

- **Homework will be assigned in Canvas with certain due dates.** Be sure check your Assignments in Canvas, and set your reminders as necessary, for the dates and times that correspond to your classwork.
- All homework and project deliverables must be turned in **canvas assignments** to earn credit and receive a grade. If the assignment is not posted in canvas, a zero will be recorded for that assignment.
- Should you have extenuating circumstances, including those dealing with your health (e.g., COVID-19 or other issue), **contact your instructor.** Your instructor will work with you and others, as needed, in the university community to make the appropriate adjustments. They may, at their discretion, accept a ‘past due’ assignment, however, **you must email your instructor and ask him to open the canvas assignment for you.** The instructor retains the right to ask for documentation of your ‘extenuating circumstance’ before they reopen the assignment. The canvas assignment will remain open for 24 hours, after the request has been accepted with a confirmation email from the instructor to the student.
- A **late penalty** will be assessed at the end of the course with the calculation of your final grade. Canvas turns late assignments red. At end of course, you lose points if you have more than 3 red boxes in canvas. You will lose 1 point from your final homework score for every late assignment more than 3.

Grading Scale

Grade	Percentage
A	100 - 93
A-	92 - 90
B+	89 - 86
B	85 - 83
B-	82 - 80
C+	79 - 76
C	75 - 70
D	69 - 60
F	59 - 0

- Percentages that fall between grades will be rounded up. (See also [University Grading Policy](#)).
- Grades posted to Canvas are for reference only, and students should make sure they are recorded correctly. However, there is no guarantee that the percentages or projected grades provided there are correct. The instructor will calculate final percentages and will determine final grades regardless of Canvas calculations.

Assignment/Evaluation Methods

- Evaluation

Activity	Percentage
Homework Assignments	35
Attendance & Class Participation	10
Debate and Defend (3 @ 5% each)	15
Exams (4 @ 10% each) <i>3 exams during the semester & 1 exam during final exam week</i>	40

- Homework Assignments (35% of the total grade)
 - Completion of assignments and problem sets posted on Canvas. The instructor cannot stress the importance of making time to work on class assignments outside of class. Students are expected to complete professionally formatted assignments and assignments will be graded with a numerical score.
 - The student's personal effort is expected on each and every homework assignment. Transcription, copying, or any dishonest way of completing the homework will not be tolerated and results in penalty. Lack of personal effort may severely impact your ability in the exams.
 - Late submission – 'Habitual lateness' will not be tolerated. For extenuating circumstances, contact your instructor. See details about late work in the previous section.
- Attendance & Class Participation (10% of the total grade)
 - Attendance at all class meetings is mandatory and will be taken at the start of every class. Please be prompt as attendance will be concluded once the lecture starts.
 - Late arriving to class: if you do arrive late, it is your responsibility to check in with the instructor at the conclusion of class to be marked late rather than absent.
 - A maximum of three (3) absences will be allowed before you lose points from your attendance grade. You will lose one point for each additional absence until you have lost all 10 points from your attendance. Extenuating circumstances will be evaluated on a case-by-case basis.
 - Absence requires documentation by canvas message to the instructor prior to the absence is mandatory, except for extreme circumstances. Further documentation may be required. If there is no canvas message generated by the student to the instructor, an absence is recorded.
- Debate and Defend (15%, each 5% of the total grade)
 - There will be three debate and defend sessions in class. Students working in groups learn about specific environmental topics by their own using the provided instructions and worksheets. Students will present their results and findings in the debate and defend session.
 - Students' performance in the debate and defend sessions will be assessed by both the instructor and peer students.
- Exams (40%, each 10% of the total grade)
 - There will be four exams, three taken in class and one in the final exam week. The exam date is not likely to change, but if it does, any change will be announced sufficiently ahead of time. Students who will not be available for the exams should inform the instructor far enough before the exam to make an alternate arrangement. Students who miss the exams unexpectedly (e.g., due to sudden illness, family emergency, or other unforeseen circumstances) must provide documentation or evidence of the reason for missing the exam. It will then be up to the instructor's discretion whether a "make-up" exam will be offered.
 - The format of the examinations (quantitative, qualitative, problem-solving, multiple choice, true/false, essay, etc.) will be left to the discretion of the instructor.
 - All examinations will be closed-book, closed-notes format.
 - My intention is to design exam questions such that students who have attended class and have done the homework assignments will be familiar with all the material needed to answer the questions. It will not be my intention to "surprise" you, only to challenge you.
- **Changes in syllabus and assignment sheets may be modified as deemed appropriate. All changes will be announced in class.

University Policies

Basic rules for in the classroom, IST, and Campus

1. We highly recommend, until further notice, that you wear your face-covering during class and throughout the building at all times.
2. Absolutely **no eating or drinking** during class.

Reasonable Accommodations

Florida Polytechnic University is committed to assisting students with disabilities and offering reasonable accommodations to those with documented eligibility. The Office of Disability Services (ODS) coordinates accommodations for students with disabilities in accordance with the ADA Amendments Act of 2008 (ADAAA), the Americans with Disabilities Act of 1990 (ADA), and Section 504 of the Rehabilitation Act of 1973. Reasonable accommodations are determined on an individual basis through an interactive process between you, ODS, and your instructor(s). If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course and communicate with your instructor about your approved accommodations at your earliest convenience. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):

DisabilityServices@floridapoly.edu

(863)874-8770

ASC East building

[ODS website](http://www.floridapoly.edu): www.floridapoly.edu > Student Affairs > Health Wellness > Disability Services

Accommodations for Religious Observances, Practices and Beliefs

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See [University Policy](#).)

Title IX

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. It is an educational goal that you feel able to share information related to your life experiences in classroom discussions and in one-on-one meetings. However, it is requirement for university employees to share information with the Title IX Coordinator regarding disclosure. However, please know that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University [Ombuds Office](#), BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at [Peace River Center](#), 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment.

Academic Integrity

All students must commit to the highest ethical standards in completion of all academic pursuits and endeavors, whether in classroom or online environments: [Academic Integrity](#).

Student Record of Lectures

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use.

Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidentally, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action).

*Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers **is prohibited**.*

- For further information, go to [the Registrar's webpage](#) and click on [HB233 Guidance](#).

Course Schedule

- Subject to change per course policies.

Week	Lecture Topic	Reading
1	Sustainability: Overview	Chapter 1
2	Sustainability: Environmental systems, Ecosystems	Chapter 2-3
3	Sustainability: Biodiversity	Chapter 4
4	Sustainability: Species interaction	Chapter 5
5	Sustainability: Human population; Exam #1	Chapter 6
6	Sustainability: Climate; Debate and Defend #1	Chapter 7
7	Biodiversity: Saving species, Saving ecosystems	Chapter 8-9
8	Resources: Food production; Exam #2	Chapter 10
9	Resources: Water resources	Chapter 11
10	Resources: Mineral resources; Debate and Defend #2	Chapter 12
11	Resources: Energy resources	Chapter 13
12	Environmental quality: Environmental hazards; Exam #3	Chapter 14
13	Environmental quality: Air pollution, Climate change	Chapter 15
14	Environmental quality: Solid waste	Chapter 16
15	Human societies: Environmental economics and politics	Chapter 17
16	Final Review; Debate and Defend #3	
Final	Exam #4 - Final Exam	