



FLORIDA  
ATLANTIC  
UNIVERSITY

## COURSE CHANGE REQUEST Undergraduate Programs

Department Chemistry and Biochemistry  
College Science

UUPC Approval 11-4-24  
UFS Approval \_\_\_\_\_  
SCNS Submittal \_\_\_\_\_  
Confirmed \_\_\_\_\_  
Banner Posted \_\_\_\_\_  
Catalog \_\_\_\_\_

Current Course  
Prefix and Number CHM 3400

Current Course Title  
Introduction to Physical Chemistry

Syllabus must be attached for ANY changes to current course details. See [Template](#). Please consult and list departments that may be affected by the changes; attach documentation.

Change title to:

Change description to:

Change prefix

From: \_\_\_\_\_ To: \_\_\_\_\_

This introductory-level course in physical chemistry emphasizes the principles of scientific reasoning while covering the fundamental theory of gases, chemical thermodynamics, kinetics, and catalysis.

Change course number

From: \_\_\_\_\_ To: \_\_\_\_\_

Change credits\*

From: \_\_\_\_\_ To: \_\_\_\_\_

Change prerequisites/minimum grades to:

Change grading

From: \_\_\_\_\_ To: \_\_\_\_\_

Change corequisites to:

Change WAC/Gordon Rule status\*\*

Add  Remove

Change General Education Requirements\*\*\*

Add  Remove

\*See [Definition of a Credit Hour](#).

\*\*WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See [WAC Guidelines](#).

\*\*\*GE criteria must be indicated in syllabus and approval attached to this form. See [Intellectual Foundations Guidelines](#).

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes: Fall 2024

Terminate course? Effective Term/Year for Termination:

Faculty Contact/Email/Phone Tito Sempertegui / tsempert@fau.edu / 561-297-2508

Approved by

Department Chair

*Andrew Terpelt's*

Date

9-27-24

College Curriculum Chair

*Emily D. Sargeant*

10/25/24

College Dean

*Eryn*

10-24-24

UUPC Chair

*Korey Sarge*

11-4-24

Undergraduate Studies Dean

*Dan Meeroff*

11-4-24

UFS President

Provost

Email this form and syllabus to [mjenning@fau.edu](mailto:mjenning@fau.edu) seven business days before the UUPC meeting.

# **CHM 001 10225 - Introduction to Physical Chemistry**

CHM 3400 001 (10225): Introduction to Physical Chemistry

**Department of Chemistry and Biochemistry**

**Fall 2024**

**3 credit hours**

**Instructor: Dr. Elijah St. Germain**

**Face to Face lectures M/W/F 11-11:50 AM GS 117**

**Office Location: WebEx/PS 333**

**Office Hours: M/W 12-1:00 PM**

**Email: estgerma@fau.edu**

## **COURSE DESCRIPTION**

This introductory-level course in physical chemistry emphasizes the principles of scientific reasoning while covering the fundamental theory of gases, chemical thermodynamics, kinetics, and catalysis.

## **COURSE prerequisites**

CHM 2046 with a grade of D- or better.

## **COURSE OBJECTIVES**

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

1. Understand how physical properties such as temperature and pressure are measured, and how such measurements are applied across the sciences.
2. Relate extensive and intensive properties through physical laws and use this to analyze chemical thermodynamic processes, and to understand them on the molecular level. Interpret and utilize Carnot cycles.
3. Understand the mathematical and physical interpretation of SI units, as well as how to convert them and how some are derived from others.
4. Calculate enthalpies of reaction from reference enthalpies of formation from pure elements.
5. Understand chemical kinetics and graphically determine reaction order.
6. Identify basic symmetry groups as they apply to molecules.

## **COURSE DELIVERY MODE**

This is a primarily classroom delivered course with in-person attendance Mondays and Wednesdays and some remote attendance/activities on Fridays. Remote attendance and course content is accessible only through FAU's learning management system, Canvas. You must log into Canvas with your FAU ID and Password to access the materials and assignments in this course. If you do not know your FAU ID or Password, [contact OIT for help](#).

The course is organized into modules according to the chapters we will cover this semester. Each module will include a link to the chapter of the textbook being covered as well as a series of lecture videos. Each video

comes with the section of the chapter that should be read beforehand, a list of in-chapter and end of chapter problems to work on after watching the video, and other instructor's notes as needed. Students are expected to have watched all of the videos and done all of the work posted up to the day before each Web Ex problem session. **Classes will be held in person GS 117 on Monday, Wednesday and Friday from 11:00-11:50 AM.**  
**Schedule of Lecture Topics and Assignments**

| Week of Subject | Special Notes                                     |
|-----------------|---|
| 8/19            | Introduction, Overview                            |
| 8/26            | SI Units, Thermometry                             |
| 9/2             | Pressure: Barometry                               |
| 9/9             | Ideal Gas Law, State Functions                    |
| 9/16            | Thermodynamics, 1 <sup>st</sup> Law<br>Exam 1 Wed |
| 9/23            | Thermodynamics, Path Functions                    |
| 10/7            | Heat Capacity                                     |
| 10/14           | Enthalpy of Formation                             |
| 10/21           | Entropy/Carnot Cycles<br>Exam 2 Mon               |
| 10/28           |   |
| 11/4            | Kinetics  |
| 11/11           | Catalysts<br>Exam 3 Fri                           |

11/18

11/25      Reading Days

12/2      Final                      Reading Days

## TIME COMMITMENT PER CREDIT HOUR

This course has 3 credit hours. For traditionally delivered courses, not less than one (1) hour of classroom or direct faculty instruction each week for fifteen (15) weeks per Fall or Spring semester, and a minimum of two (2) hours of out-of-class student work for each credit hour. Equivalent time and effort are required for Summer Semesters, which usually have a shortened timeframe. Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will demonstrate equivalent time and effort.

## REQUIRED TEXTS & MATERIALS

Required Texts/Materials: NONE

ISBN-13: 9781285969770

ISBN-10: 1285969774

## MINIMUM TECHNOLOGY & COMPUTER REQUIREMENTS

### Hardware & Software Requirements

#### Hardware

- Dependable computer
- Computer speakers
- Headset with microphone
- Webcam

#### Software

- [Microsoft 365 Suite](#)
- Reliable web browser (recommended [Chrome](#) or [Firefox](#))
- Canvas mobile app: Download instructions for [iOS device](#) or [Android device](#)
- [Adobe Reader](#)
- [Adobe Flash Player](#)

#### Internet Connection

- Recommended: Broadband Internet connection with a speed of 4 Mbps or higher.

To function properly, Canvas requires a high-speed Internet connection (cable modem, DSL, satellite broadband, T1, etc.). The minimum Internet connection speed to access Canvas is a consistent 1.5 Mbps (megabits per second) or higher. • [Check your Internet speed here.](#)

## Other Technologies

### Computer Requirements

#### Basic [Computer Specifications](#) for Canvas

- Operating system: Windows 10 or macOS Sierra (or higher). [Specifications](#)

### Peripherals

- A backup option should be available to minimize the loss of work. This can be an external hard drive, a USB drive, cloud storage, or your folder on the FAU servers.

### Software

- Once logged in to Canvas make sure your Internet browser is compatible.

Other software may be required for specific learning modules. If so, the necessary links to download and install will be provided within the applicable module.

### Minimum Technical Skills Requirements

The general and course-specific technical skills you must have to succeed in the course include but are not limited to:

- Accessing Internet.
- Using Canvas (including taking tests, attaching documents, etc.).
- Using email with attachments.
- Creating and submitting files in commonly used word processing program formats such as Microsoft Office Tools.
- Copying and pasting functions.
- Downloading and installing software.
- Using presentation, graphics, and other programs.
- Posting and commenting in an online discussion.

Searching the FAU library and websites.

### Technical Support

In the online environment, technical issues are always possible (e.g., lost connection, hardware or software failure). Many of these can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased. Please plan appropriately. If a problem occurs, it is essential you take immediate action to document the issue so your instructor can verify and take appropriate action to resolve the problem. Most issues in Canvas can be resolved by clicking on the “Help” tab located on the menu bar.

When a problem occurs, click “Help” to:

- Report a Problem
- Live Chat with Canvas Support
- Search Canvas Guides

## Additional Technical Support

1. Contact the eLearning Success Advisor for assistance: (561) 297-3590
2. If you can, make a Print Screen of the monitor when the problem occurs. Save the Print Screen as a .jpg file. If you are unfamiliar with creating a Print Screen file, see [Print Screen instructions](#).
3. Complete a [Help Desk ticket](#). Make sure you complete the form entirely and give a full description of your problem so the Help Desk staff will have the pertinent information in order to assist you properly. This includes:
  1. Select “Canvas (Student)” for the Ticket Type.
  2. Input the Course ID.
  3. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
  4. Attach the Print Screen file, if available.
4. Send a message within Canvas to your instructor to notify him/her of the problem. Include all pertinent information of the incident (2b-d above).
5. If you do not have access to Canvas, send an email to your instructor with all pertinent information of the incident (2b-d above).
6. If you do not have access to a computer, call your instructor with all pertinent information of the incident. If he/she is not available, make sure you leave a detailed message.
7. If you do not hear back from the Help Desk or your instructor within a timely manner (48 hours), it is your responsibility to follow up with the appropriate person until you obtain a resolution. Course Assessments, Assignments & Grading Policy

## Grading Criteria

### Syllabus & Course Agreement

You will read the syllabus and complete a syllabus and course agreement.

### Course Examinations (total 80%)

There will be three online exams (see schedule) lasting 50 min each, and a cumulative final exam lasting 50 min. Students must access the course through canvas which will utilize Lockdown Browser and webcam monitoring (see hardware requirements) to ensure academic integrity and fairness to all. The instructor will calculate your grade based on the following weighted distribution:

| Assessment | Total Points | Percentage (%) |
|------------|--------------|----------------|
| 3 Exams    |              |                |

|                         |     |     |
|-------------------------|-----|-----|
| · Worth 150 points each | 450 | 45% |
| Final Exam              | 150 | 15% |

|                    |     |     |
|--------------------|-----|-----|
| · Worth 150 points | 400 | 40% |
|--------------------|-----|-----|

**TOTAL:** **1000** **100%**

| <b>Extra Credit</b> | <b>Total Points</b> | <b>Percentage (%)</b> |
|---------------------|---------------------|-----------------------|
|---------------------|---------------------|-----------------------|

Lowest Exam score dropped (next lowest counts twice)

Grade Scale

Please note that the minimal threshold for grades will not be raised but it may be lowered slightly (ie. a score of 90 is guaranteed to be at least an A-)

| <b>Grade</b> | <b>Percentage (%)</b> |
|--------------|-----------------------|
|--------------|-----------------------|

|   |           |
|---|-----------|
| A | 93 – 100% |
|---|-----------|

|    |          |
|----|----------|
| A- | 90 – 92% |
|----|----------|

|    |          |
|----|----------|
| B+ | 87 – 89% |
|----|----------|

|   |          |
|---|----------|
| B | 83 – 86% |
|---|----------|

|    |          |
|----|----------|
| B- | 80 – 82% |
|----|----------|

|    |          |
|----|----------|
| C+ | 77 – 79% |
|----|----------|

C 73 – 76%

C- 70 – 72%

D+ 67 – 69%

D 63 – 66%

D- 60 – 62%

F 0 – 59%

### **Late Assignments Policy**

Extra credit cannot be made up for any reason, but assignments can be made up in the circumstances listed below.

### **Make-up Policy for Tests**

Make-up exams will only be given in the following circumstances:

1. Death in the immediate family
2. Illness with note from medical provider
3. FAU sponsored event
4. Required court appearance, including jury duty
5. Religious Holiday

For a make-up to be considered, the student must not have sat for the exam, and a make-up request with documentation must be provided within one week of the missed exam.

### **Incomplete Grade Policy**

The University policy states that a student who is passing a course but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor but is allowed only if the student is passing the course.

## **COURSE POLICIES**

### **Code of Academic Integrity Policy Statement**

Students at Florida Atlantic University should endeavor to maintain the highest ethical standards. Academic dishonesty is a serious breach of these ethical standards because it interferes with the University mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic

dishonesty is also destructive to the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#).

## Plagiarism

[Plagiarism](#) is unacceptable in the University community. Academic work must be an original work of your own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they must acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass off such work as one's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized. This includes all discussion board posts, journal entries, wikis, and other written and oral presentation assignments. If in doubt, cite your source.

## Online Attendance Policy

Since the course is online, you should access the course **at least three times per week** to ensure you do not miss pertinent postings, messages, or announcements. It is imperative that you meet course deadlines and stay active in discussion boards, group projects, etc. If you are experiencing major illness, absences due to University duties, or other large-scale issues, contact the instructor immediately to formulate a resolution.

## Netiquette

Due to the casual communication common in the online environment, students are sometimes tempted to relax their grammar, spelling, and/or professionalism. Please remember that you are adult students and professionals—your communication should be appropriate. For more in-depth information, please see the [FAU statement on netiquette](#).

## Classroom Etiquette/Disruptive Behavior Policy Statement

Disruptive behavior is defined in the FAU Student Code of Conduct as "... activities which interfere with the educational mission within classroom." Students who disrupt the educational experiences of other students and/or the instructor's course objectives in a face-to-face or online course are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include but is not limited to non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

For more information, please see the [FAU Office of Student Conduct](#).

## COMMUNICATION POLICY

### Expectations for Students

#### Announcements

You are responsible for reading all announcements posted by the instructor. Check the course announcements each time you log in.

#### Email/Video Conferencing

You are responsible for reading all your course email and responding in a timely manner.

### Course-Related Questions

Post course-related questions to the appropriate discussion board. This allows other participants with the same question to benefit from the responses. Also, make sure you review this forum prior to posting a question.

Someone may have already asked and answered the question in previous posts.

### Instructor's Plan for Classroom Response Time & Feedback

### Email/Video Conferencing Policy

Except for weekends and holidays, the instructor will typically respond to email (Canvas inbox or FAU email) within 48 hours. You should ask course-related questions in the FAQ discussion board. If you have questions of a personal nature, you should email the instructor.

### Assignment Feedback Policy

The instructor will provide feedback on submitted assignments within one week of the submission date. Some assignments may require a longer review period, which the instructor will communicate to you.

### Course-Related Questions Policy

Except weekends and holidays, the instructor will generally answer questions within 48 hours.

### **Electronic Communication Policy**

In addition to the University's policy, please consider the following:

- Privacy, confidentiality, and security in all electronic communications.
- All electronic communication resources must be used for the course and in alignment with the University mission.
- Prohibited use of false identity, false identity pseudonyms, or anonymous (sender's name or electronic identification is hidden).
- Access without consent.
- Disruption of services including introducing computer contaminants (viruses).

Harassment of any kind.

Please see the Office of Information Technology's policies on [Cyber Security Awareness](#).

### SUPPORT SERVICES & ONLINE RESOURCES

- [Center for eLearning and Student Success](#)
- [Counseling and Psychological Services](#)
- [FAU Libraries](#)
- [Freshmen Academic Advising Services](#)
- [Math Learning Center](#)
- [Office of Information Technology Helpdesk](#)
- [Office of International Programs and Study Abroad](#)
- [Office of Undergraduate Research and Inquiry](#)
- [Student Accessibility Services](#)

[University Center for Excellence in Writing](#)

## FACULTY RIGHTS & RESPONSIBILITIES

Florida Atlantic University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede their exercise.

To ensure these rights, faculty members have the prerogative to:

- Establish and implement academic standards.
- Establish and enforce reasonable behavior standards in each class.
- Recommend disciplinary action for students whose behavior may be judged as disruptive under the *Student Code of Conduct*.

## Selected University & College Policies

### Accessibility Policy Statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations to properly execute coursework due to a disability, must register with Student Accessibility Services (SAS) located in the Boca Raton, Davie, and Jupiter campuses and follow all SAS procedures. For additional information, please consult [Student Accessibility Services](#).

### Contact

- **Boca Raton:** (561) 297-3880

Fax: (561) 297-2184, TTY: 711

- **Davie:** (954) 236-1222

Fax: (954) 236-1123, TTY: 711

- **Jupiter:** (561) 799-8721

Fax: (561) 799-8721, TTY: 711

### Grade Appeal Process

You may request a review of the final course grade when you believe that one of the following conditions apply:

- There was a computational or recording error in the grading.
- The grading process used non-academic criteria.
- There was a gross violation of the instructor's own grading system.

[Chapter 4 of the University Regulations](#) contains information on the grade appeals process.

#### Religious Accommodation Policy Statement

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs regarding admissions, registration, class attendance, and the scheduling of examinations and work assignments. For further information, please see [Academic Policies and Regulations](#).

#### University Approved Absence Policy Statement

In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is your responsibility to notify the instructor at least one week prior to missing any course assignment.

#### Drops/Withdrawals

You are responsible for completing the process of dropping or withdrawing from a course. Please click on the following link for more information on dropping and/or withdrawing from a course. Please consult the [FAU Registrar Office](#) for more information.

\* \* \*

#### **The instructor reserves the right to adjust this syllabus**

Some courses are using Simple Syllabus to display their syllabus. You can [click here](#) to see if your courses are using it.

#### University Approved Attendance Policy

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

#### Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>