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**	BCH 3103L	***Current* Course Title**	Biochemistry Lab

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 prefix

From: **To:**

Change course number

From: **To:**

Change credits*

From: **To:**

Change grading

From: **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 description to:

This course provides practical training in applying chemical techniques to analyze biological materials. Through experiments covering topics such as to protein quantification, separation, identification and analysis, enzyme kinetics, ELISA, and DNA isolation, students gain proficiency in laboratory techniques and data analysis while emphasizing experiment design and interpretation.

Change prerequisites/minimum grades to:

Change corequisites to:

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	***Date***
Department Chair Andrew Tetrault's	9-27-24
College Curriculum Chair	10/25/24
College Dean	10-24-24
UUPC Chair Korey Sorge	11-4-24
Undergraduate Studies Dean Dan Meeroff	11-4-24
UFS President	
Provost	

Email this form and syllabus to mienning@fau.edu seven business days before the UUPC meeting.

FLORIDA ATLANTIC UNIVERSITY

BCH 3103L-001 10216

Biochemistry Lab

Date: Wednesday 12:00 PM - 12:50 PM

Building: Physical Science Bldg Boca **Room:** 233

Date: Wednesday 1:00 PM - 4:50 PM

Building: Physical Science Bldg Boca **Room:** 233

3 Credit(s)

Fall 2024 - 1 Full Term

Instructor Information

Shailaja Allani

Email: skesaraj@fau.edu

Office:PS336A

Office Hours:W 11AM- 12PM

Phone: 561-799-8224

TA Name:NA

TA Name:NA

Email: nvela2016@fau.edu

Course Description

This course provides practical training in applying chemical techniques to analyze biological materials. Through experiments covering topics such as to protein quantification, separation, identification and analysis, enzyme kinetics, ELISA, and DNA isolation, students gain proficiency in laboratory techniques and data analysis while emphasizing experiment design and interpretation.

Biochemistry Laboratory

Prerequisites: BCH 3033, CHM 2211L with minimum grades of "C"

Instructional Method

This class is designated as in-person mode of delivery.

The course will be organized into weekly sessions with experiments planned. Each week will have all the material required, power point presentations, video of the experiment, lectures and assignments.

Student Attendance

Attendance is taken for every lecture and lab period and all students must complete all the experiments planned.

Prerequisites/Corequisites

Prerequisite(s): All of the following:

- BCH 3033 Graduate / Undergraduate (Minimum Grade of C)
- CHM 2211L Graduate / Undergraduate (Minimum Grade of C)

Required Texts/Materials

Lab Manual on Canvas
Lab Manual is on Canvas

Course Objectives/Student Learning Outcomes

1. Learn fundamental research techniques utilized in a biochemistry and molecular biology laboratory.
2. Develop scientific writing abilities; ability to write a laboratory report for every experiment as a research paper
3. Develop critical thinking, scientific reasoning and analytical skills.

Lecture: The lecture part of this laboratory course will cover important techniques used in biochemistry and will describe how these techniques are applied when investigating specific types of macromolecules. The lecture material will be coordinated with the lab experiments and will describe the methods used in the lab as well as related methods not actually demonstrated in the experiments.

Faculty Rights and 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 theStudent Code of Conduct University Regulation 4.007.

Disability Policy

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Course Evaluation Method

Course Evaluation Method

The instructor will calculate your grade based on the following weighted distribution:

Assessment	Total Points	Percentage (%)
Course Orientation • Student Introduction – Worth up to 10 points. • Syllabus & Course Agreement Quiz – Worth up to 10 points.	20	2% (Extra credit)
12-14 Live Sessions & Homework	100	10%
8-9 Lab reports (one lowest grade will be dropped)	600	60%
Final Exam	300	30%
TOTAL:	1020	102%

LIVE SESSIONS & Pre-lab/Post-lab: All students are expected to attend all sessions.

Each pre-lab/post-lab work will consist of problems, short essays, and will be designed to test the students understanding of the experiments, including the theory, the calculations and graphs needed to analyze the

data, and sources of error in the experiments. Other related techniques described during the lab lecture will also be covered by this component.

LIVE SESSIONS, PRELAB/POST LAB Chapter quizzes (10 %)

Each pre-lab/post-lab work will consist of problems, short essays, and will be designed to test the students understanding of the experiments, including the theory, the calculations and graphs needed to analyze the data, and sources of error in the experiments. Other related techniques described during the lab lecture will also be covered by this component.

LAB REPORTS (TOTAL 60%): Students need to submit lab report for every experiment performed. There are total 8-9 lab reports and the lab report with the lowest score will be dropped. The lab report will be written in the style of a research article. The report will have the following components: a title page with author name and the date of the experiment; abstract- summarize the experiment with objective of the experiment, methods used, results obtained and conclusions drawn; background-a mini literature review of one paragraph that gives history and relevance of the experiment; methodsprotocol of the experiment; results-results obtained with properly labeled graphs and figures; conclusions-discussing results and drawing conclusions; references- list references cited.

FINAL EXAM (TOTAL 30 %): The final exam will be cumulative test evaluating theoretical concepts, numerical problems and analytical skills. Exam will be conducted via Canvas.

Examinations will be based on readings, lectures, homework, and class discussions. The exams will include multiple choice, true/false and/or short answer questions. Answers will be evaluated based on content in terms of accuracy of information and ability to analyze the issues. Good answers will demonstrate that you have read and understood the chapters, and actively participated in classroom discussions. Exams will be taken online in the Canvas Learning Management System. Test will be timed. No make-up exams are given.

Final letter grades will be assigned based on total grade points earned, as set forth in the table below. Grade points will not be rounded up. Please do NOT ask for special grade consideration. All assessments must be administered in accordance with published guidelines, and exceptions cannot be made for individual students.

Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered 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 of 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.

Attendance Policy Statement

Students are expected to attend all 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 nonattendance. 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.

LABORATORY SCHEDULE (Tentative, subject to change)

Week	Date	Topi c	Report
1	8/21	Syllabus and Introduction; Safety Procedures	
2	8/28	Lab 1. Identification of an Amino Acid / Titrate amino acid- Paper chromatography	
3	9/04	Lab 2. Spectroscopic Analysis of Protein	Lab 1
4	9/11	Lab 3. Size exclusion & SDS-PAGE: Protein MW Determination	Lab 2
5	9/18	Lab 3: Size exclusion SDS- PAGE for Lab 4	
6	9/25	Lab 4: Western Blot – Protein expression of housekeeping genes	Lab 3
7	10/2	Lab 5: Affinity Chromatography	Lab 4
8	10/9	Lab 6: High Pressure Liquid Chromatography (HPLC)-Plant pigment analysis	Lab 5

9	10/16	Lab 7: Enzyme Assay – Enzyme Kinetics (Km and Vmax)	Lab 6
10	10/23	Lab 8: DNA isolation PCR/Alu sequences	
11	10/30	Lab 8: DNA isolation PCR/Alu sequences	Lab 7
12	11/06	Lab 9: ELISA	Lab 8
13	11/13	FINALS	Lab 9

Religious Accommodation Policy Statement

In accordance with the 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. University Regulation 2.007, Religious Observances, sets forth this policy for FAU and may be accessed on the FAU website at www.fau.edu/regulations.

Any student who feels aggrieved regarding religious accommodations may present a grievance to the executive director of The Office of Civil Rights and Title IX. Any such grievances will follow Florida Atlantic University's established grievance procedure regarding alleged discrimination.

Time Commitment Per Credit Hour

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 outof-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.

Course Grading Scale

Letter Grade	Letter Grade
A	92 - 100%
A-	91 - 90%

Letter Grade	Letter Grade
B+	87 - 89%
B	82 - 86%
B-	80 - 82%
C+	77 - 79%
C	73 - 76%
C-	70 - 72%
D+	67 - 69%
D	63 - 66%
D-	60 - 62%
F	Below 60

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.

University Regulation 4.002 of the University Regulations contains information on the grade appeals process

Policy on Make-up Tests, Late work, and Incompletes

Labs: Students are expected to attend every lab, and to arrive promptly and well prepared. Tardiness will result in a low grade for lab performance. A student who is absent from a lab without an excuse, will receive an "F" for that lab report. If you have an unforeseeable circumstance, inform your TA or the instructor about missing the lab. NO LAB MAKE UPS are possible.

Exams: Make-up exams will not be given unless the student has an acceptable, documented excuse and informs the instructor prior to the exam that he or she will be absent. If these conditions are not met, a grade

of zero will be given for the missed exam. Any student found to be cheating on an exam would receive an “F” in the course.

Data: All data is to be taken into an online lab notebook. Any student found to be altering or falsifying data will receive an “F” in the course.

Lab Reports: Late lab reports will not be accepted unless a student has made arrangements with the instructor prior to the due date for the report. Lab reports are due at the beginning of the lab period indicated on the lab schedule. Any student not turning in a lab report on time will receive a zero for that report. Lab reports must be written individually. Copying or paraphrasing all or part of a lab report from another student’s report, the textbook, the lab manual, or any other

source is cheating and will result in a grade of “F” for the course. Turnitin score greater than a 70% will be penalized and graded out of 50 points instead of 100 points. If there is a similarity score greater than a 80%, student will receive zero as a grade.

Please note that students will not be penalized for absences due to participation in Universityapproved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. Reasonable accommodation will be made for students participating in a religious observance. Also, note that grades of Incomplete (“I”) are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances.

Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording class activities other than class lectures, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations between students in the class or between a student and the lecturer, is prohibited. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University’s Student Code of Conduct and/or the Code of Academic Integrity.

Artificial Intelligence Preamble

FAU recognizes the value of generative AI in facilitating learning. However, output generated by artificial intelligence (AI), such as written words, computations, code, artwork, images, music, etc., for example, is drawn from previously published materials and is not your own original work.

FAU students are not permitted to use AI for any course work unless explicitly allowed to do so by the instructor of the class for a specific assignment. **[Policy 12.16 Artificial Intelligence]**

Class policies related to AI use are decided by the individual faculty. Some faculty may permit the use of AI in some assignments but not others, and some faculty may prohibit the use of AI in their course entirely. In the case that an instructor permits the use of AI for some assignments, the assignment instructions will indicate when and how the use of AI is permitted in that specific assignment. It is the student's responsibility to comply with the instructor's expectations for each assignment in each course. When AI is authorized, the student is also responsible and accountable for the content of the work. AI may generate inaccurate, false, or exaggerated information. Users should approach any generated content with skepticism and review any information generated by AI before using generated content as-is.

If you are unclear about whether or not the use of AI is permitted, ask your instructor before starting the assignment.

Failure to comply with the requirements related to the use of AI may constitute a violation of the **Florida Atlantic Code of Academic Integrity, Regulation 4.001.**

Proper Citation: If the use of AI is permitted for a specific assignment, then use of the AI tool must be properly documented and cited. For more information on how to properly cite the use of AI tools, visit **https://fau.edu/ai/citation**

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 therapy, group therapy, and crisis services, to name a few - offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/

Student Support Services and Online Resources

- Center for Learning and Student Success (CLASS)
- Counseling and Psychological Services (CAPS)
- FAU Libraries

- Math Learning Center
- Office of Information Technology Helpdesk
- Center for Global Engagement
- Office of Undergraduate Research and Inquiry (OURI)
- Science Learning Center
- Speaking Center
- Student Accessibility Services
- Student Athlete Success Center (SASC)
- Testing and Certification
- Test Preparation
- University Academic Advising Services
- University Center for Excellence in Writing (UCEW)
- Writing Across the Curriculum (WAC)