

Course Syllabus

Spring 2025 – HUN 6936

Topics in Nutritional Sciences: Nutrition and Cardiac Physiology

Time and location: M, Period 2, 8:30 am-9:20 am, MCCA2186

Instructor: Dr. Bin Liu.

Office: 572 Newell Drive, Building 475, Room 349A

Office Hours: W, Period 2 or by appointment

Office Phone: 352-294-3752

Email: binliu1@ufl.edu

COURSE DESCRIPTION: This course introduces current topics in cardiac research to students. It offers one credit hour, and the lecture meets once weekly. Emphasis will be given on: 1, calcium (Ca) regulation of the heart and how Ca dysregulation contributes to cardiac dysfunctions; 2, the impact of genetic defects and diet or nutrition on cardiac physiology; 3, the development of molecular/ gene therapies.

Lecture topics described below will introduce students to several active subfields of cardiac studies, utilizing both classic methods as well as cutting-edge technical approaches.

COURSE PREREQUISITES:

It is suggested that students have taken undergraduate level classes in human physiology or animal physiology. To understand the material presented in this class, students must have completed at least six hours of biological science.

CLASSROOM MATERIALS:

Peer-reviewed journal articles make up the majority of the required readings for this course and will be uploaded to Canvas prior to discussion.

Lecture notes, slides corresponding to covered topics will be posted on Canvas.

You are required to have access to a computer that connects to the Internet. The course materials can be accessed through canvas. The canvas email is considered an official means of communication between students and instructor.

LEARNING OBJECTIVES:

- 1) Gain an overview of the cardiac physiology and understand how genetic defects and diet/ nutrition may contribute to cardiac dysfunctions.
- 2) Understand calcium regulation of cardiac function from molecular, cellular level to whole organ level.
- 3) Understand classic methods and modern techniques to study cardiac function and develop therapies.

Academic Integrity: All work must be done individually. There are no group projects, quizzes or exams in this course. NO project or open-ended question should mimic another.

All students are expected to follow the UF student code of conduct with regard to academic honesty. Academic misconduct is dishonest or unethical academic behavior that includes, but is not limited, to misrepresenting mastery in an academic area (e.g., cheating), intentionally or knowingly failing to properly

credit information, research or ideas to their rightful originators or representing such information, research or ideas as your own (e.g., plagiarism). Any violations or breaches of academic integrity will be reported and dealt with by the Dean of Students Office for consideration of disciplinary action.

To help in understanding how to appropriately cite other peoples' work – and specifically on how to avoid plagiarism, you should familiarize yourself with information at: <https://blogs.ntu.edu.sg/library-resources/guide-to-academic-writing-and-avoiding-plagiarism/>

CLASSROOM ETIQUETTE: Any behavior that is distracting, disruptive, or disrespectful to me, or your fellow classmates will not be tolerated and will result in dismissal from the classroom. This includes, but is not limited to disrespectful comments, use of tobacco products, use of cell phones/wireless devices, disruptive behavior or the use of any type of communication device. All cell phones must be turned to silent while in the classroom, not to vibrate. Do not browse the internet, text message, or IM while in the classroom. The use of computers for taking notes is permitted in the classroom. If the instructor believes that this privilege is being abused, computers will no longer be allowed. If you believe your fellow classmates abused the utilization of electronic devices or distracted you, you are encouraged to report to me.

ATTENDANCE:

It is expected that all students enrolled have a vested interest in attending class and participating in the discussions. Students' participation in classroom discussion is an important part of the grading.

EXAMS/Evaluation:

Students are expected to give presentations (20 points) and participate in classroom discussion (10 points). Additionally, they will earn points from quizzes (20 points). There will be one exam at the end of the semester (50 points).

Please arrive "on time" for the presentations and other lecture activities (quizzes). Your attendance WILL NOT be counted if you are more than 20 mins late to the lecture, or if the presenter has already finished the presentation (whichever comes the first). Quizzes are given out at the beginning of the lecture. Students who are more than 5 mins late will not be able to get credit from the quizzes.

MISSED PRESENTATIONS: If you are not able to complete your presentations by the indicated time, you must notify the instructor as soon as possible. SWITCH PRESENTATION will be given for university approved absences only, with appropriate documentations of the reason.

Exam Make-Up Policy: Make-up exams may not be provided unless there are extenuating circumstances (e.g. illness, medical, death in family, etc). In which case, contact your instructor immediately by e-mail (binliu1@ufl.edu) to discuss the situation and to make suitable arrangements for a make- up exam – appropriate documentation of the absence must be provided in order to receive a make-up exam. The make-up exam may be essay.

OTHER INFORMATION:

Services for Students with Disabilities: 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/ The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Campus Helping Resources: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- **University Counseling & Wellness Center**, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/ where the following are available: Counseling Services, Groups and Workshops, Outreach and Consultation, Self-Help Library, Wellness Coaching. Please contact the University Police Department: 352-392-1111 or 9-1-1 for emergencies.

- **U Matter We Care:** Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

- **Career Resource Center**, First Floor JWRU, 392-1601, www.crc.ufl.edu/

- **Sexual Assault Recovery Services (SARS):** Student Health Care Center, 352-392-1161.

- **University Police Department:** 352-392-1111 (or 9-1-1 for emergencies). <http://www.police.edu/>

- **E-learning technical support:** 352-392-4357 (select option 2) or email to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

- **Library Support:** <http://cms.uflib.ufl.edu/ask>. Receive assistance with respect to using the libraries or finding resources.

- **University of Florida Complaints Policy:** Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information. On-Line Students Complaints: View the Distance Learning Student Complaint Process.

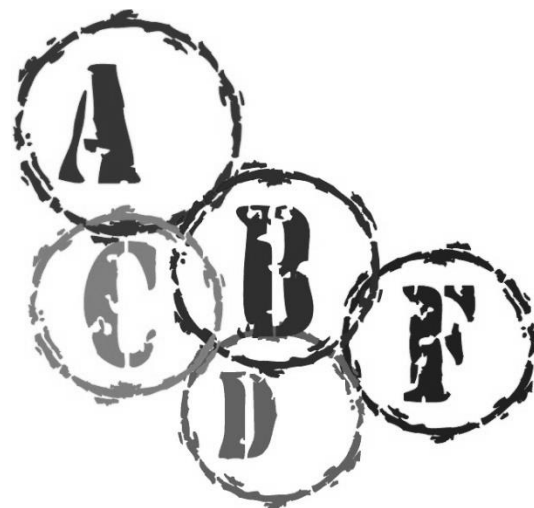
- **In-class recordings:** Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are

(1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services.

GRADING:

Presentation	20	100 points
Participation in discussion	10	
Quiz	20	
Final Exam	50	

A	90 or above	C	70-73
A-	87-89	C-	67-69
B+	84-86	D+	64-66
B	80-83	D	60-63
B-	77-79	D-	57-59
C+	74-76	F	56 or below



TENTATIVE CLASS OUTLINE:

The instructor reserves the right to make changes to the course schedule if necessary. Other required reading may be assigned for each lecture.

Week	Topic and tentative schedule
1, Jan 13	Syllabus; Introduction and muscle physiology
2, Jan 20	<i>Holiday</i>
3, Jan 27	Cardiac physiology in general
4, Feb 3	Regulation of cardiac contraction by calcium, myofilaments contractile machinery
5, Feb 10	Animal models and methods
6, Feb 17	Metabolic heart disease and calcium misregulation: prediabetes <i>(lecture on this date will be rescheduled due to a conference)</i>
7, Feb 24	Metabolic heart disease and calcium misregulation: diabetic cardiomyopathy
8, March 3	Metabolic heart disease and calcium misregulation: diabetic cardiomyopathy
9, March 10	Cardiac arrhythmias and current therapies
10, March 17	<i>Spring break</i>
11, March 24	Cardiac arrhythmias and current therapies
12, March 31	Heart failure and current therapies
13, April 7	Student presentation
14, April 14	Student presentation
15, April 21	Heart failure and current therapies

Final Exam: 5/01/2025 @ 3:00 PM - 5:00 PM