

Physiology 514: Advanced Cardiovascular Physiology
Spring 2018
Tuesday and Friday
8:00 - 9:30 am
E504 (Physiology Conference Room)

Course Director: Julian Stelzer
E522, 368-8636, jes199

Recommended Texts: Medical Physiology, Boron & Boulpaep
Physiology, Berne & Levy
Cardiovascular Physiology Concepts, Richard E. Klabunde

Participating Faculty	Location	Email
Julian Stelzer – Course Director	Physiology & Biophysics	jes199@case.edu
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Course Description and General Organization

This advanced-level course will focus on major areas of cardiovascular physiology, under both normal and pathological conditions. In general, one topic will be covered per session; occasionally a topic will be allotted two sessions for appropriate coverage. Each session will consist of:

- 1) 45 min presentation/discussion of basic concepts and focus questions based on a review paper or on textbook readings
- 2) 45 minute presentation/critique of 1 (possibly 2) original research papers

There are no formal lectures. Each session will predominantly involve student-led presentations/discussions of the focus questions or original research papers pre-assigned for that session. The exact formats for student-led presentations may vary between different faculty instructors but a common evaluation/ grading metric will be used for all sessions.

A midterm exam will cover the material presented in the initial 7 weeks while a final exam will cover the material presented in the final 7 weeks.

<i>Date</i>	<i>Topic</i>	<i>Faculty</i>	
Tuesday	16-Jan	Introduction	Stelzer
Friday	19-Jan	Experimental Models of the Heart	Berthiaume
Tuesday	23-Jan	Metabolic Remodeling & CV Disease	Berthiaume
Friday	26-Jan	Cardiotoxicants: the Physiology of Poisons	Berthiaume
Tuesday	30-Jan	Ischemia/Reperfusion/Preconditioning	Qi
Friday	2-Feb	Ischemia/Reperfusion/Preconditioning	Qi
Tuesday	6-Feb	Gene Regulation of the CV System	Proweller
Friday	9-Feb	Vascular Development and Angiogenesis	Ramirez
Tuesday	13-Feb	Cardiac Hypertrophy	Romani
Friday	16-Feb	Cardiac Hypertrophy	Romani
Tuesday	20-Feb	Diabetic Cardiomyopathy	Romani
Friday	23-Feb	Heart Failure	Romani
Tuesday	27-Feb	Calcium regulation in electrophysiology	Laurita
Friday	2-Mar	Stem Cell and Regeneration	Laurita
Tuesday	6-Mar	TBA	
Friday	10-Mar	Midterm Examination	
Tuesday	13-Mar	TBA	
Friday	16-Mar	TBA	
Tuesday	20-Mar	Stem Cells and Regeneration	Fu
Friday	23-Mar	Electrophysiology	Deschênes
Tuesday	27-Mar	Electrophysiology	Deschênes
Friday	30-Mar	Thin Filament Mutations	Mamidi
Tuesday	3-Apr	Regulation of Contractility	Stelzer
Friday	6-Apr	Hypertrophic Cardiomyopathy	Stelzer
Tuesday	10-Apr	Hypertension	Garvin
Friday	13-Apr	Cardiac Isoforms and Mutations	Stelzer
Tuesday	17-Apr	Signaling	Dubyak
Friday	20-Apr	Immune System and CV Disease	Shi
Tuesday	24-Apr	TBA	
Friday	27-Apr	Final Examination	

Evaluation and Grading

Examinations:

Each exam will consist of 1 essay type question/class session, which represents approximately 12-14 questions. You will answer only 8 questions per exam. Each exam will account for 35% of the total grade.

Class Participation:

Each student will receive a cumulative weekly evaluation grade (0-3; see below) for his/her preparation and presentations in the Tuesday and Friday discussions. The cumulative scores for class participation will account for 30% of the total grade.

Class Preparation and Presentation Scoring Guidelines:

3 = Very strong understanding of material; outstanding preparation; voluntarily generates relevant questions or comments during discussions.

2 = Generally correct answers; has clearly read material in detail; acceptable contribution to discussions.

1 = Inaccurate or incomplete answers; somewhat familiar with study material; participation in open discussion is limited.

0 = Unprepared or unable to contribute to discussion in a way that indicates familiarity or comprehension of study material. Unexcused absence.

Policy on Excused Absences:

If a student misses a session for a valid reason (illness, family emergency, attendance at a scientific meeting) the course director must be informed in advance of the class (if attending a meeting or other such conflict) or by noon on the day of the absence (if due to illness or family emergency) to be granted an excused absence.

Final Grading:

Midterm exam:	35% total grade
Final exam:	35% total grade
Cumulative Class Participation:	30% total grade