

ADVANCED CARDIOVASCULAR PHYSIOLOGY

3100:465/565, 3 credits

Prerequisite- Animal Physiology, 3100: 495

Spring, 2007

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Tu & Th ASC 120

9:15-10:30

1. Required Text : Klabunde, Cardiovascular Physiology Concepts, 2005

2. Current Scientific Readings posted on course website

3. Powerpoint lectures on course website

<u>Date</u>	<u>Lecture</u>	<u>Text Reading</u>	<u>Powerpoint</u> <u>Lecture #</u>	<u>Sci. Readings #</u>
January				
16	Introduction/Risk Factors	Ch 1	# 1.AHA stats, #2.textch.1	
18	Electrophysiology	Ch 2	#3. textch.2	#1. Okin, Prog. Value of heart rate...
23	Electrophysiology	Ch 2		
25	Cellular Physiology	Ch 3	#4. textch.3	
30	Cardiac Cycle			
February				
1	Cardiac Output	Ch 4 Ch 4	#5.textch.4	
6	Vascular Function	Ch 5	#6. textch.5	
8	Blood Pressure	Ch 5	#7. Hypertension I	#2 Steptoe, BP stress
13	Neurohumoral Control	Ch 6	#8. textch.6	
15	EXAM 1			
20	Presidents Day-no class			
22	Integration	Ch 6		
27	Organ Blood Flow	Ch 7	#9. textch.7	
March				
1	Special Circulations/ Outlines Due	Ch 7		
6	Microcirculation	Ch 8	#10. textch.8	#3. Ritter: Microcirc.
8	Microcirculation	Ch 8		
13	Exercise and Pregnancy	Ch 9	#11. textch.9	#4. Collins, exercise
15	Angiogenesis	Ch 9		#5. Sottile, Reg. Angio....

9-25 **Spring Break**

#6. Libby,angio
#7. Folkman,Endog. Angio...
#8 Teodoro, Inhib. angio

27 Hypertension

Ch 9 #12. Hypertension II **#9.. Oparil. Path. Hyper.**

29 Heart Failure

Ch 9 #13. Heart Failure

April

3 **EXAM 2**

5 Atherosclerosis

#14. HDL/LDL/Athero

#10.. Keaney.Athero

10 Nutrition & CHD

#15. Nutrition

#11 DASH

#12 Afman-nutrigenomics

12 Behavioral Cardiology

#16.Behav. Cardio.

#13 Absi-Anger

17 Behavioral Cardiology

19 Gender & Heart Disease

#17.Feminine heart

#14. Couzin,Estrogen COX

Grad students Papers Due- see course requirements

#15. Dubey,Hor. Replacmt.

24 Heart Transplant

#18. Heart transplant

26 Oral Presentations

May

1 Oral Presentations

3 Oral Presentations

May 10, (Thursday) Final Exam 12:00-1:55

Summary of Important Dates:

EXAM 1- Feb 15

EXAM 2-April 3

Graduate Outlines Due-March 1

Spring break-March 19-25

Graduate Papers Due- April 19

Oral Presentations-April 26-May 3

Final Exam, May 10, Thursday, 12-2

Course Policies

- Attendance - you are expected to attend each class period and actively participate with

questions, discussion and answers . If you are going to miss a class inform me ahead of time and if absent due to illness inform me as soon as possible.

- Exams - you are expected to take all exams and complete assignments on time. For illness contact me as soon as possible. No radios, tape players, cell phones, headsets. For medical and other authorized absences an oral make-up covering the same objectives and lasting 1 hour will be given at the end of the semester.
- Grades- no incomplete grades will be given except due to extreme circumstances and the instructor has been notified by the student or immediate relative.
- Late work- no exceptions- assignments are due on stated date.
- E-mail or voice mail- a voice or e-mail left for me without an acknowledgement that I received and read it is the same as not contacting me! Talk to me live !
- Help - I am here to facilitate your learning experience and I will meet individually with you at your convenience to discuss course material. Please feel welcome to ask for help.
- Bonus points will be given periodically and are meant to help your understanding of current research topics.
- You may record lectures, but no cell phones on in class.
- No student will be given an opportunity to improve a grade that is not made available to all class members

Course Description:

This course is intended to prepare students and health professionals to understand the concepts, issues and mechanisms of heart and blood vessel physiology in health and disease. Lecture and discussion will be used and critical thinking will be demonstrated and encouraged on each topic. Learning assessment will be determined by pre/post test scores and scores on standardized tests of basic physiological concepts often misunderstood.

Course Objectives:

- To understand and appreciate the complex **integrated** function of the cardiovascular system in health and disease.
- To apply the knowledge acquired from the course to problem solve, critically think, and evaluate related information from current scientific literature.
- Grad students-to orally express your concerns, ideas, and responses effectively in front of your peers.
- Grad students-to effectively communicate your knowledge and ideas in a written and oral format.

Course Requirements:

Students are expected to:

- attend each class, take notes and discuss issues when called upon
- read each assignment before coming to class
- take each exam on time and maintain a record of study time (exam form-multiple choice,

matching, short answer, integrative essay)

- graduate students are to take each exam and complete the graduate essay question, and either write a critique research paper or give a Powerpoint oral presentation (details in separate handout for graduate students)
- study time is estimated to be 9-12 hrs/week
- critique paper and oral presentation preparation time will vary but should be about 10 pages for the critique paper and 10 min (10-15 slides) for the oral talk.

Oral Presentation Guidelines (10 minute presentation with 5 minute discussion)

1. Select a controversial topic or compare human and animal studies on the same subject.
2. Conduct a literature search- try to find 10-15 articles and narrow them down to 2-4 to present.
3. Turn in a 1 page outline with references- due **March 1**.
4. Format (time to present 2-4 studies in 10 minutes)
 - Introduction - state your name and the topic and why there is a controversy (1-2 minutes).
 - Methods - briefly state the subjects, experimental design, measurements (2-3 minutes).
 - Results - show graphs (transparencies, slides, flip charts or computer slides of data (5 minutes).
 - Conclusion (30 seconds).
5. Answer questions (5 minutes).
6. Hand in title page, reference page and articles.

Graded on organization(25%), clarity(25%), interpretation(10%), use of audio-visuals(20%), timing(10%),and ability to answer questions(10%).

Things to check that are often overlooked. Practice your timing- points taken off for under or over time!

- Speak clearly and slowly
- Look at the audience
- Use visual aids effectively
- Use large enough printing on overheads to be read at the back of class
- Do not use complex tables or graphs, keep them simple
- State precisely your conclusion

Critique Paper Guidelines

Outlines Due: March 1

Papers Due: April 19

- I. Select a topic that involves the cardiovascular system. Start early since finding and sending for the articles can take several weeks.
- II. Get original articles, not reviews (**2001-2006**). Collect 10-15 articles but you will select only two to critique. Select 1 animal and 1 human article to compare on the subject. If you can't find an appropriate article of each see me. You will hand in the two papers you write about.
- III. Format

Title page

Name, course, data

Summary (1 page) - for both studies

Introduce the problem (1-2 pages)

Hypothesis and Objectives

State hypothesis, objectives and subjects use - - human, animal groups
(1-2 pages)

Results

Describe the main results (2-3 pages)

Critique (3-5 pages)

Critique Points to Cover

State and answer each of the following questions for each article:

1. Did they state the hypothesis and objectives and were they clear?
2. Did they point out any limitations of the study or do you see any limitations they didn't bring up?
3. What were the major strengths and weaknesses of the article? (**most important question**)
4. What is your overall rating of each article on a scale of 1 (poor), 5 (average), 10 (excellent) compared to the best and worst articles you have read for the course?
5. Describe how the animal study and human study support or contradict each other. Describe similarities or differences.

Conclusion (1/2 to 1 page)

State in a few sentences what you conclude

Bibliography

List all authors, complete title, journal, volume, page #'s, year

IV. Things to check that are often overlooked

- a. page numbers
- b. hand in original papers
- c. proofread

Tips on how to perform at your best in the course:

- Attend all class sessions, take notes, ask questions and answer when called on
- Read the assigned chapters before coming to class
- Study at least 9-12 hours/week (keep track of it to write down at exam time) and make flash cards and test questions to quiz yourself
- Study with peers after you have gone over the material yourself
- Ask questions over the previous material at the beginning of class
- Share current events and WEB related material at the beginning of class
- Students with special needs meet with the instructor during the first week

Academic Honesty Policy

Cheating on an exam, plagiarizing, or any form of academic dishonesty will be dealt with in accordance with the current University of Akron student discipline code. The instructor reserves the right to assign a grade of "F" for the course should circumstances warrant.

Grading

	<u>Points</u>	<u>Grade Determination</u>
	Undergraduate	Graduate

Exam 1	100	120	A=92% or greater
Exam 2	100	120	B=80-91%
Final Exam	200	220	C=70-79%
			D=60-69%
			F=<60
Graduate Paper or Presentation	<u> </u>	<u>140</u>	
Total	400	600	