

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Undergraduate Programs	UUPC Approval <u>3-29-21</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Exercise Science and Health Promotion College Science	
Current Course Prefix and Number APK 4134	Current Course Title Exercise Physiology 2	
<i>Syllabus must be attached for ANY changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.</i>		
Change title to: No Change Change prefix From: No Change To: Change course number From: No Change To: Change credits* From: 2 To: 3 Change grading From: No Change To: Change WAC/Gordon Rule status** Add <input type="checkbox"/> Remove <input type="checkbox"/> Change General Education Requirements*** Add <input type="checkbox"/> Remove <input type="checkbox"/> <small>*Review Provost Memorandum **WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines. ***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.</small>	Change description to: No Change Change prerequisites/minimum grades to: No Change Change corequisites to: No Change Change registration controls to: No Change 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 2021	Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Michael Zourdos / mzourdos@fau.edu / 301-580-7536		
Approved by Department Chair <u>M. Hitchcock</u> College Curriculum Chair <u>Jerry Haky</u> College Dean <u>Jerry Haky</u> UUPC Chair <u>Jerry Haky</u> Undergraduate Studies Dean <u>Edward Pratt</u> UFS President _____ Provost _____		Date <u>3/2/21</u> <u>3-18-21</u> <u>3/24/2021</u> <u>3-29-21</u> <u>3-29-21</u> _____ _____

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



COLLEGE OF SCIENCE
DEPARTMENT OF EXERCISE SCIENCE AND HEALTH PROMOTION
APK 4134 Exercise Physiology 2
(CRN 15447, Sec 001, 3 credits)
Spring 2021

<u>Instructor:</u>	Robert Zoeller, Ph.D.
<u>Office:</u>	Athletic Field House West – Bldg 11A – Room 123
<u>Office Hours:</u>	By appointment. Continuously available by e-mail, text, or phone.
<u>Phone:</u>	(561) 297-2549 (office), (954) 439-2132 (cell)
<u>Email:</u>	rzoeller@fau.edu
<u>Class Hours:</u>	Tuesday 11:00 AM – 12:20 PM
<u>Location:</u>	Student Union – Room 103

Course Prerequisites

APK 4110/4110L – Exercise Physiology & Lab or equivalent, and HSC 2110 or equivalent. A grade of C or better must have been obtained in these prerequisite courses as well as Anatomy and Physiology 1 & 2 (including labs) and General Chemistry (w/lab). If you do not meet these requirements, you are required to drop the course.

Course Description

To further the underlying knowledge of physiological function as it pertains to exercise. Perspectives and data will be explored related to environmental aspects of exercise with special attention paid to training at altitude and the effects of microgravity on muscle loss and bone density.

Course Objectives:

Students should be able to demonstrate an in-depth knowledge of advanced exercise physiology principles including ability to

- 1) describe the factors that determine cardiac contractility
- 2) describe and explain the neural control of heart rate and contractility.
- 3) demonstrate an understanding of the determinants of cardiac output including preload and afterload.
- 4) demonstrate a comprehension of the factors that determine blood flow.

- 5) demonstrate an understanding of the factors that regulate blood flow and vascular resistance and function.
- 6) demonstrate an understanding of the central and peripheral control of the cardiovascular system in response to an acute bout of exercise and the adaptations that occur with regular exercise training.
- 7) demonstrate a knowledge of the physiologic foundations of fitness assessment and exercise prescription
- 8) understand the benefits of exercise in health and disease
- 9) demonstrate an understanding of the pathophysiology of coronary artery disease
- 10) identify risk factors for atherosclerotic disease
- 11) demonstrate an understanding of the acute and chronic effects of altitude on pulmonary and cardiac function
- 12) understand the effects of scuba diving on different organs and body systems
- 13) Demonstrate a knowledge of the impact of exposure to a microgravity environment
- 14) Understand how the environmental temperature affects the body
- 15) Describe the role and effects of contractile activity (exercise) in inducing adaptations in skeletal muscle.
- 16) Demonstrate an understanding of the molecular basis of skeletal muscle plasticity including muscular hypertrophy and endurance.

Required Textbook

Exercise Physiology *Theory and Application to Fitness and Performance* (Scott K. Powers & Edward Howley, authors). **11th edition. DIGITAL FORMAT** . Digital ISBN: 9781260967395

OR

Exercise Physiology *Theory and Application to Fitness and Performance* (Scott K. Powers & Edward Howley, authors). **10th edition. HARDCOPY** New York, NY: McGraw Hill Education, 2018. ISBN: 9781259870453.

Evaluation

Three written exams	75% of final grade*
Quizzes and other assignments	25% of final grade

Grading Scale

92.0 – 100 % = A	72.0 – 77.9% = C
90.0 – 91.9% = A-	70.0 – 71.9% = C-
88.0 – 89.9% = B+	68.0 – 69.9% = D+
82.0 – 87.9% = B	62.0 – 67.9% = D
80.0 – 81.9% = B-	60.0 – 61.9% = D-
78.0 – 79.9% = C+	< 60.0% = F

Course Delivery Mode

This course is designated as *Mixed Online and Classroom* which is defined as “50% - 79% of the course is delivered online”. Following this definition, we will meet face to face only three times this semester as detailed below. All lectures will be video recorded and available to all students and attendance is in no way required. If you wish to attend any of the three classes in person, you must notify me in advance to ensure safety of all attendees.

The on-line component of this course 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 schedule is organized by the week. You will need to log into Canvas frequently for announcements. You should also check your FAU e-mail frequently. Doing so will ensure you are current and timely with assignments as well as quizzes and exams. Lectures will be delivered/available by video (i.e., Mediasite) or Powerpoint presentations with audio.

Time Commitment per Credit Hour

This course is two (2) 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.** Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will require equivalent time and effort.

Hardware and Computer Requirements

- Dependable computer
- Computer speakers or headphones
- 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.](#)

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
- software may be required for specific learning modules.

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.

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:
 - a. Select “Canvas (Student)” for the Ticket Type.
 - b. Input the Course ID.
 - c. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
 - d. 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.

Online courses can only be successful when you **organize your time**. Plan to do assignments so that you will have time to complete them in a timely, professional manner. **Don’t wait to the last minute** to read the assigned chapters or articles. Allow adequate time to prepare for quizzes and exams.

- **Deadlines are set to help you pace out your workload. Adequate time will be given for the completion of all assignments and preparation for quizzes and exams.**
- Assignments are due on the date and time provided. Late submissions will not be accepted unless documentation of an emergency is provided.
- Students are expected to take quizzes and exams as scheduled. **Prior approval by course instructor is prerequisite for make-up quizzes and exams.**
- Quizzes are based on reading(s) assigned for that particular week. If the student has read/studied the assigned material, this should represent no problem or undue hardship.
- Exams are based on the material presented in the lectures. A comprehensive review will precede each exam.
- **Instructor reserves the right to give quizzes without prior notice.**

STUDENTS WITH DISABILITIES: “In compliance with the Americans with Disabilities Act Amendment Act 2008 (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with the Student Accessibility Services and follow all SAS procedures.”

SAS has offices across three of FAU’s campuses – in Boca Raton, SU 133 (561-297-3880); in Davie, LA 131 (954-236-1222); or in Jupiter, SR 111 (561-799-8585) – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

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 counselling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to www.fau.edu/counseling/.

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 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 - https://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

Bibliography

1. Berne, R.M. and Levy, M.N. (2001). *Cardiovascular physiology* (8th ed.). St. Louis, MO: Mosby Inc. ISBN # 0-323-01127-6.
2. Duchateau J., Semmler J.G., Enoka R.M. . (2006). Training adaptations in the behavior of human motor units. *101*, 1766-1775.
3. Guyton, A.C. and Hall, J.E. (1996). *Textbook of medical physiology* (9th ed.). Philadelphia, PA: W.B. Saunders Co. ISBN # 0-7216-5944-6.
4. Joyner, M.J. and Green, D.J. (2009). Exercise protects the cardiovascular system: Effects beyond traditional risk factors.
5. Klabunde, R. E. (2005). *Cardiovascular physiology concepts* . Philadelphia, PA: Lippincott, Williams, and Wilkins.
6. Lilly, L. S. (2003). *Pathophysiology of heart disease – A collaborative project of medical students and faculty* (3rd ed.). Philadelphia, PA: Lippincott, Williams, and Wilkins. ISBN # 0-7817-4027-4.
7. Mohrman, D.E. and Heller, L.J. (1997). *Cardiovascular physiology* (4th ed.). New York, NY: McGraw-Hill. ISBN # 0-07-028025.
8. Smith, J.J. and Kampine, J.P. Kampine. (1990). *Circulatory physiology – the essentials* (3rd ed.). Baltimore, MD: Williams and Wilkins. ISBN # 0-683-07775-9.

APK 4134 Exercise Physiology 2 TENTATIVE Schedule Spring 2021

<u>Week</u>	<u>Topic and/or Assignment</u>	<u>Reading</u>	
		<u>Power's Text</u>	
		<u>10th Edition</u>	<u>11th Edition</u>
1 (Jan 12)	Introduction & orientation, syllabus, Cardiovascular responses to exercise	Chapter 9	Chapter 9
2 (Jan 19)	Cardiovascular responses to exercise Quiz 1	Chapter 9	Chapter 9

3 (Jan 26)	Atherosclerosis, CVD, and exercise	Chapter 14	Chapter 15
4 (Feb 2)	Atherosclerosis, CVD, and exercise Quiz 2 Review for Exam1	Chapter 14	Chapter 15
5 (Feb 9)	Exam 1		
6 (Feb 16)	Exercise and environment – effects of heat and cold Quiz 3	Chapters 12,24	Chapters 12,23
7 (Feb 23)	Exercise and environment - effects of altitude Quiz 4	Chapters 10,24	Chapters 12,23
8 (Mar 2)	Exercise and environment - microgravity		Assigned reading
9 (Mar 9)	Exercise and environment scuba diving Review for Exam 2		Assigned reading
10 (Mar 16)	Exam 2		
11 (Mar 23)	Molecular basis of training adaptations	Chapter 13 Assigned reading	Chapter 13
12 (Mar 30)	Molecular basis of training adaptations	Chapter 13 Assigned reading	Chapter 13
13 (Apr 6)	Protein intake and performance Molecular Worksheet due	Chapters 23, 25	Chapter 22, 24
14 (Apr 13)	Supplements and performance Review for Exam 3	Chapters 23, 25	Chapter 22, 24
Apr 19	Last Day of Classes		
Apr 20 - 21	Reading Days		
Apr 27	Exam 3		

