

## ERGOGENIC AIDS

APK 5936

3 CREDITS

SRING 2020

*This class is entirely on-line. All your course lectures will be in video format and all assessments will be submitted in canvas.*

**Instructor:**

**Steve Borst, Ph.D.**

Email: [seborst@ufl.edu](mailto:seborst@ufl.edu)

Phone: (352)-283-1567

*Preferred method of contact: I encourage you to call or email with you questions*

**Departmental contact:**

**Michael Balkcom**

PO Box 118205, 100 Florida Gym,  
294-1702 [mbalkcom@ufl.edu](mailto:mbalkcom@ufl.edu)

**Office Hours:**

*No traditional office hours will be held for this online course; however, the instructor is open to email discussions, phone conversations, web-chats, or in-person meetings upon request.*

**Course Website:**

[www.http://lss.at.ufl.edu](http://lss.at.ufl.edu)

**COURSE COMMUNICATIONS:** *General questions for the course should first be posted to the general discussion board. If your questions are not sufficiently answered, then please email the instructor through the email tool for the course management system (CANVAS) rather than through a personal email account.*

**REQUIRED ATERIALS:** You will need the following resources for class:

**TEXTBOOK:** THERE IS NO TEXTBOOK ASSIGNED TO THIS COURSE.

**SUPPLEMENTARY MATERIALS:** Journal articles have been placed on the website in a folder titled "REQUIRED READING".

**COURSE OVERVIEW:** This a special-topics graduate course is designed primarily for Masters and Ph.D. students in Exercise Science and related fields. Ergogenic Aids are defined as substances,

nutritional supplements, or practices that are designed to increase athletic performance. Some ergogenic aids are allowed in competition and others are banned and may even be illegal. Topics covered include 1) a review of relevant physiology to define the goals of ergogenic aids, 2) discussion of data showing which ergogenic aids have been proven to be effective and which have not and 3) methods for athletic drug testing.

**PREREQUISITES:** There are no specific prerequisites for APK 3936. However, some knowledge of general physiology and exercise physiology is required.

**COURSE GOALS:**

- Learn/review the metabolism of fats, carbohydrates and protein.
- Learn how the metabolism of fats, carbohydrates and protein contribute to exercise performance.
- Learn/review the metabolism of fats, carbohydrates and protein presents opportunities for ergogenic aids to enhance performance
- Learn about compounds classified as vitamins, minerals, dietary supplements and drugs that are purported to have ergogenic effects
- Learn about practices that are purported to have ergogenic effects
- Learn which drug/practices have been shown to be effective and which have not
- Learn about substances that are banned for the purposes of athletic competition
- Learn about drug testing for athletes

**COURSE POLICIES:**

Participation Policy: Because this is an entirely online course, you are not expected to physically be on UF's campus at any time. However, you most certainly ARE expected to participate in discussion posts, assignments, engagement activities, and exams.

Make-up policy: Unexcused missed exams will result in a zero on the exam (this includes contacting the instructor after the exam if you are ill). If you are sick or have an emergency that prevents you from taking the exam at the scheduled time, it is your responsibility to contact the instructor as soon as possible. Documentation of the illness or emergency will be required. If you need to schedule a make-up exam, please email the course instructor giving a detailed explanation and attaching any documentation that verifies your reasoning. Make-up exams will be given at the discretion of the instructor. Scheduling make-up exams is the responsibility of the student and should be done—if at all possible—before the scheduled exam time. If you have a serious emergency or death, please contact the Dean of Students Office ([www.dso.ufl.edu](http://www.dso.ufl.edu)) and they will contact your instructor so that you do not have to provide documentation of the emergency/death in order to get a make-up exam. Make-up exams are NOT permitted for the following (among others): family vacation, sporting event travel, attending weddings (unless you are IN the wedding), having exams in other classes on the same day.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with the university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**UNIVERSITY POLICY ON ACCOMODATING STUDENTS WITH DISABILITY:** Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.

**Netiquette - Communication Courtesy:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Please consider the following pointers for emailing your course instructor:

- Send your email to the address preferred by your instructor. For this course, your instructor prefers to be contacted with the email tool in CANVAS.
- Use a professional salutation at the beginning of your message (“Good Morning, Dr. Borst” or “Hello, Dr. Borst”).
- Keep your message as clear and concise as possible. Reading a three-page dissertation on the importance of your family vacation is not fun for anyone except your mother.
- All uppercase letters indicates shouting...PLEASE AVOID THIS!
- Refrain from profanity in your message, even if it is meant to be humorous.
- Refrain from using texting abbreviations such as OMG or BTW. Your course instructor is not tech-savvy and has no idea what most of these abbreviations mean.
- Close your emails respectfully and politely (“Thank you for your time, John Jones”).
- <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

#### **GETTING HELP:**

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)
- (352) 392-HELP - select option 2
- <https://request.it.ufl.edu/>

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints

- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

### GRADING FORMULA:

**Exams:** There will be 2 exams. Exam 1 will cover units 01 through 13 as listed below. Exam 2 will cover units 14 through 26. Each exam will consist of 25 to 30 short answer and multiple-choice questions. Practice questions and answers are provided online.

**Presentation:** Each student will prepare a PowerPoint presentation of approximately 15 minutes on a topic of interest related to ergogenic aids.

The talk should address either 1) a scientific point about whether an ergogenic aid is effective or not or 2) data about the use of ergogenic aids in athletics.

The talk should be about a topic that is currently being debated, not a 'textbook' subject. Email the instructor, Dr. Borst [seborst@ufl.edu](mailto:seborst@ufl.edu) to approve topic. The main criterion will be if there is enough information on your topic. For those who need a suggestion, a list of possible subjects is provided. The talk should provide a background on the subject, cite results from at least three scientific papers. Don't use commercial information from the internet. To make the key point, include original graphs from the paper. If papers disagree in their conclusions, try to decide if one is better-designed than the other.

Exam 1	37% of grade
Exam 2	37% of grade
Presentation	21% of grade
Comments on presentations of 4 other students	5% of grade

After each exam/assignment, grades may be viewed on the class web site.

### GRADING SCALE:

*All points earned in the course will be summed and divided by the total points available. Any discrepancies with points displayed in either gradebook should be pointed out to the instructor before the last day of class. See the UF undergraduate catalog web page for information regarding current UF grading policies: [www.registrar.ufl.edu/catalog/policies/regulationgrades](http://www.registrar.ufl.edu/catalog/policies/regulationgrades). The following table describes the grade scale and GPA impact of each letter grade. Depending on the results of the 2 exams, the instructor may decide to grade on a curve.*

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	93.00-100	4.00
A-	90.00-92.99	3.67
B+	87.00-89.99	3.33
B	83.00-86.99	3.00

B-	80.00-82.99	2.67
C+	77.00-79.99	2.33
C	73.00-76.99	2.00
C-	70.00-72.99	1.67
D+	67.00-69.99	1.33
D	60.00-66.99	1.00
E	<60.00	0.00

### COURSE SCHEDULE:

WEEK	TOPICS OR ASSIGNMENTS	
1	Introduction Fuel Utilization Mobilization of Fuels During Physical Performance	
2	Determinants of $VO_{2max}$ Glycogen Loading Proteins & Amino Acids – part 1	
3	Proteins & Amino Acids – part 2 Arginine Hormones & Hypertrophy – part 1	
4	Hormones & Hypertrophy – part 2 Signals Generated During Exercise Nutritional Supplement Packages	
5	STUDY FOR EXAM 1 TAKE PRACTICE EXAM (find on class website) Exam I covers units 1-13	
6	<b><u>TAKE EXAM 1</u></b> (37% OF GRADE)	Opens 8:00 AM Thursday, Feb 13 Closes 5:00 PM Sunday, Feb 16
7	SELECT PRESENTATION TOPIC AND OK WITH INSTRUCTOR PREPARE PRESENTATION	
8	<b><u>MAKE YOUR PRESENTATION</u></b> (21% OF GRADE) VIEW AT LEAST 4 PRESENTATIONS BY OTHER STUDENTS AND <b><u>FILL OUT REVIEW SHEET</u></b> (5% OF GRADE)	Post presentation on class website by 5:00 PM Sunday, March 8
9	Review presentations by other students and fill out review form	Post review form on class website by 5:00 PM Sunday, March 15
10	Vitamins, Minerals & Individual Supplements Sports Drinks	

	Banned Substances	
11	Drug Testing Anabolic Steroids – part 1 Anabolic Steroids – part 2	
12	Steroid Controversy Growth Hormone Stimulants	
13	Oxygen Delivery – part 1 Oxygen Delivery – part 2 Creatine – part 1	
14	Creatine – part 2 Clenbuterol	
15	STUDY FOR EXAM 2 Covers units 14-26	
16	<b><u>TAKE EXAM 2</u></b> (37% OF GRADE)	Opens 8:00 Thurs, April 23 Closes 5:00 PM, Sunday, April 26

#### STUDY TIPS:

- Read assigned articles before you view the lecture.
- Stick to the advised schedule – don't fall behind.
- Approach the instructor with your questions. [seborst@ufl.edu](mailto:seborst@ufl.edu) or (352) 283-1567
- There is a practice exam for exam 1. Be sure to take it so you are prepared for the format of the questions.
- Check Canvas for updates/reminders from Dr. Borst

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at [Evaluations - https://evaluations.ufl.edu/](https://evaluations.ufl.edu/) Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open.

Students requesting classroom accommodation must first register with the Dean of Student Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Here are the additional current links for UF policies:

Student Honor Code - <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

Grades - [www.registrar.ufl.edu/catalog/policies/regulationgrades](http://www.registrar.ufl.edu/catalog/policies/regulationgrades)

Dean of Students office for students with disabilities - <http://www.dso.ufl.edu/drc/>

Counseling and Wellness - <http://www.counseling.ufl.edu/cwc/Self-Help-Library.aspx>

UF Help Desk - <mailto:helpdesk@ufl.edu> or (352) 392-HELP