**Physiology of Exercise Lecture**

**(KINE3680-001) Course Syllabus**

**Spring 2021**

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**Instructor:** Bradley Ruple

**Office:**Kinesiology 260

**E-mail:** [bar0049@auburn.edu](mailto:bar0049@auburn.edu)

**Office Hours:**By Appointment Only

**Class Schedule:** TR 08:00 am-09:15 am

**Meeting Location:**STACT 257

**Textbooks (Recommended, but not required):**

Powers and Howley. Exercise Physiology: Theory and Application to Fitness and Performance. McGraw-Hill.

The 9th edition or newer is recommended for supplementary material. All information for the tests

and quizzes will come from PowerPoints and discussions in class.

**Course Description:**

This course will focus on the energetics of exercise and physiological responses and adaptations of various organ systems (muscular, circulatory, respiratory, etc.) to acute and chronic exercise in different environments.

**Course Objectives:**

* Discuss the phosphocreatine energy system, glycolysis, and oxidative phosphorylation.
* Describe the endocrine system and how it can affect exercise performance.
* Describe the acute and chronic adaptations of the neuromuscular system to exercise.
* Describe the structure and function of skeletal muscle.
* Describe cardiovascular function and adaptations to exercise and training.
* Discuss regulation of blood flow, temperature and pH during exercise.
* Identify and define the principles of training for performance improvement.

**CLASS POLICIES**

**COVID-19 Policy:**

If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials and Morgan A Smith will take over the class.

**Attendance Policy:**

Attendance is not mandatory, but consistent attendance is vital to classroom success.  Lectures, discussions, and other in class topics are critical aspects of this course. When a student is absent, this type of work cannot be replicated or “made up”. **It is the student’s responsibility to obtain all materials missed as a result of absence.**

**Absences/Make-up Policy:**

Students will be expected, should they miss a class for any excused reasons, to notify the instructor regarding the excused absence. Students will be expected to provide proper documentation regarding the excused absence, and should refer to the Student Policy eHandbook ([www.auburn.edu/studentpolicies](http://www.auburn.edu/studentpolicies)) for the definition of excused absences. Make-up work will be rescheduled for any excused absence once the documentation has been provided. If the student fails to provide proper documentation regarding the **excused absence *within one week of the absence***, they will not be able to make up any assignment missed due to the absence.

**Cell Phone Policy:**Cell phones must be turned off or on silent mode during class and not present from view. You will not be prohibited from answering cell phone calls during class time, though you will be required to leave class to answer a call. Texting in class will not be tolerated. Students observed texting will be asked to leave class if the issue persists. Cell phones and other handheld devices may not be used or visible during exams.

**Academic Honesty Policy:**

All portions of the Auburn University student academic honesty code found in the Student Policy eHandbook (www.auburn.edu/studentpolicies) will apply to university courses. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

**Accommodations:**

Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting with the instructor to activate any necessary accommodations. This should be done as soon as possible, as accommodations are not retroactive (i.e. you cannot apply accommodations to an assignment after it is due). To set up this meeting, please contact me by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

**Professionalism:**

As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These commitments are as follows: 1) engage in responsible and ethical practices, 2) contribute to collaborative learning communities, 3) demonstrate a commitment to diversity, and 4) model and nurture intellectual vitality.

**GRADING**

**Grading Rubric:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assignments** | **Description** | **Points** | **Percentage** |
| Syllabus Quiz | Syllabus Acceptance Quiz **(1)**  10 points | 10 | 1.4% |
| Quizzes | Lecture based quizzes **(10)**  10 points each | 100 | 14.1% |
| Assignments | Study guide assignments **(4)**  50 points each | 200 | 28.1% |
| Exams | Lecture based tests **(4)**  100 points each | 400 | 56.3% |
| **Total** | **-** | 710 | **100 %** |

**Grading Distribution:**

|  |  |  |
| --- | --- | --- |
| **Letter Grade** | **Point Range** | **Percent Scale %** |
| A | 639-710 | 90 – 100 |
| B | 568-638 | 80 – 89 |
| C | 497-567 | 70 – 79 |
| D | 426-496 | 60 – 69 |
| F | <425 | < 60 |

NOTE: The instructor will round grades that are .50 from the next highest letter grade (i.e. an 89.50 will round to an A). However, NO grades below this number will be rounded (i.e. an 89.49 will be given a B). Please do not ask the professor to round your grade at the end of the semester if it does not fit this criterion. Any requests for extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.

**Assignment Clarifications:**

Syllabus Quiz

Every student must completely read through the syllabus and take the quiz within the first week of class.

Quizzes

Quizzes will be given via Canvas periodically throughout the semester to reinforce topics discussed during the lectures that have been given since the previous quiz. Quizzes will open directly after class and will close midnight on the next day (i.e. if a quiz opens Tuesday at 9:15am, it will close Wednesday at 11:59pm; if it opens Thursday at 9:15am, it will close Friday at 11:59pm.)

Assignments

Before every exam, students will create a study guide in order to prepare for the test. This will include both open ended paragraphs pertaining to topics and creating multiple choice questions for chapters. More details will be given in the future.

Exams

There will be 4 lecture exams, each is worth 100 points. The exams will be given during class time as shown on the attached schedule and the last exam will be during the time scheduled by the University. If you are ill or otherwise unable (for a legitimate reason) to take any exam, it is your responsibility to notify me within 24 hours of the exam (before the exam if possible) in order to schedule a make-up exam. Make-up exams will not be given unless a valid excuse is provided in a timely manner.

***Lecture Topics: Chapters are from Powers et al.***

* Introduction to Exercise Physiology Chap 0
* Control of the Internal Environment Chap 2
* The Nervous System Chap 7
* Skeletal Muscle Chap 8
* **EXAM I**
* Bioenergetics Chap 3
* Exercise Metabolism Chap 4
* Cell Signaling and Hormones Chap 5
* **EXAM II**
* Circulatory Responses to Exercise Chap 9
* Respiration During Exercise Chap 10
* Acid Base Balance During Exercise Chap 11
* Temperature Regulation Chap 12
* **EXAM III**
* Physiology of Training Chap 13
* Physiology of Resistance Training Chap 14
* Training for Performance Chap 20
* Fatigue Chap 19
* **EXAM IV**

**CLASS SCHEDULE**

|  |  |  |  |
| --- | --- | --- | --- |
|  | DATE | TOPIC | TO DO |
| Week 1 | 1/12 | Course Introduction,  Introduction to Exercise Physiology (Ch. 0) | Syllabus Quiz |
| 1/14 | Control of the Internal Environment (Ch. 2) | Quiz 1 |
| Week 2 | 1/19 | The Nervous System (Ch. 7) |  |
| 1/21 | The Nervous System (Ch. 7) | Quiz 2 |
| Week 3 | 1/26 | Skeletal Muscle (Ch.8) |  |
| 1/28 | Skeletal Muscle (Ch.8) | Quiz 3 |
| Week 4 | 2/2 | Exam 1 Review | Study Guide |
| 2/4 | Exam 1 |  |
| Week 5 | 2/2 | Bioenergetics (Ch. 3) |  |
| 2/11 | Bioenergetics (Ch. 3) | Quiz 4 |
| Week 6 | 2/16 | WELLNESS DAY |  |
| 2/18 | Exercise Metabolism (Ch. 4) |  |
| Week 7 | 2/23 | Exercise Metabolism (Ch. 4) |  |
| 2/25 | Cell Signaling and Hormones (Ch. 5) | Quiz 5 |
| Week 8 | 3/2 | Exam 2 Review | Study Guide |
| 3/4 | Exam 2 |  |
| Week 9 | 3/9 | Circulatory Responses to Exercise (Ch. 9) |  |
| 3/11 | Circulatory Responses to Exercise (Ch. 9) | Quiz 6 |
| Week 10 | 3/16 | Respiration During Exercise (Ch. 10) |  |
| 3/18 | Respiration During Exercise (Ch. 10) | Quiz 7 |
| Week 11 | 3/23 | Acid-Base Balance During Exercise (Ch.11) |  |
| 3/25 | Acid-Base (Ch. 11) / Temperature Regulation (Ch. 12) | Quiz 8 |
| Week 12 | 3/30 | Temperature Regulation (Ch. 12)/Exam 3 Review | Study Guide |
| 4/1 | WELLNESS DAY |  |
| Week 13 | 4/6 | Exam 3 |  |
| 4/8 | Physiology of Training (Ch. 13) |  |
| Week 14 | 4/13 | Physiology of Resistance Training (Ch. 14) | Quiz 9 |
| 4/15 | Training for Performance (Ch. 20) |  |
| Week 15 | 4/20 | Fatigue (Ch. 19) | Quiz 10 |
| 4/22 | Exam 4 Review | Study Guide |
| Week 16 |  | FINAL EXAM (TBD) |  |

*\* Schedule is subject to change.*