KIN/BIO 300: Physiology of Exercise
University of Rhode Island
Department of Kinesiology
Summer 2021 – Online

<table>
<thead>
<tr>
<th>Professor</th>
<th>Dr. Allison Harper</th>
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<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:allisonharper@uri.edu">allisonharper@uri.edu</a></td>
</tr>
<tr>
<td>Phone</td>
<td>401-874-5450</td>
</tr>
<tr>
<td>Office Location</td>
<td>Room 211, Independence Square, Suite P</td>
</tr>
<tr>
<td>Office Hours</td>
<td>In person and virtual meetings available by appointment. Schedule via email.</td>
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Course Description
LEC: (3 crs.) Cross-listed as KIN/BIO 300. Applied human physiology, with applications to physical activity, exercise, and sport. Particular attention to acute and chronic adjustments of the circulatory, respiratory, metabolic, and muscular systems with exercise. Pre: BIO 220, 221, 222, and 223. Open to Kinesiology and Biology majors only.

Course Objectives
1. Demonstrate a working understanding of the scientific research process.
2. Demonstrate knowledge and understanding of energy metabolism.
3. Demonstrate knowledge and understanding of cardiorespiratory concepts relative to the acute and chronic effects of exercise.
4. Demonstrate knowledge and understanding of neuromuscular concepts relative to the acute and chronic effects of exercise.
5. Demonstrate knowledge and understanding of the structural and functional adaptations to exercise training.
6. Demonstrate knowledge and understanding of the factors that affect exercise training and factors purported to improve human performance.

IDEA Course Objectives Identified as Essential and Important for this course
- **Essential**
  - Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
- **Important**
  - Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course

Required Text

The second edition of this book is also acceptable.
Other Course Materials
Lecture videos, assignments, and other course information will be posted on Brightspace.
- You are required to check Brightspace and your URI email account several times per week to keep up with the course material.
- Time sensitive announcements will be posted on the Brightspace site, should they be necessary. Check your Brightspace account settings to make sure you get email alerts for announcements.
- In addition to required course materials, additional optional materials including suggestions for study guides and supplemental videos and readings will be posted for those who need additional assistance or are interested in a more in depth look at certain topics.

Course Requirements

Standards of Behavior: Students are expected to treat faculty and fellow classmates with dignity and respect in all written and oral communications. Students are responsible for being familiar with and adhering to the published “Student Code of Conduct” which can be accessed in the University Student Handbook (http://web.uri.edu/studentconduct/student-handbook/).

Course Engagement: Both the readings and videos (a combination of short lectures from Dr. Harper and videos from other sources) present relevant material and will contribute to the student’s understanding of the subject. Students are responsible for spending enough time with all course materials to feel comfortable discussing and applying the information they present.

Assignments: A series of 5 assignments will allow you to demonstrate your mastery of the concepts presented in each module. All assignments will be submitted through Brightspace in PDF format.

Discussions: Each module will include a discussion in which you will interact with classmates and apply concepts from the course. An initial post addressing the discussion prompt (due Thursday) and several replies to classmates (due Sunday) will be required. Reply posts should be made on different days throughout the week to facilitate a back-and-forth discussion.

Quizzes and Exams: Four module quizzes and one cumulative exam will be administered. Each will consist of a variety of question formats, which may include: multiple choice, true/false, matching, short answer, essay, and graph or diagram-based questions.

Late Work: No late assignments, quizzes, or exams will be accepted for credit. Exceptions due to medical emergencies and University sponsored activities may be made only if arranged before the original due date of the assignment, quiz, or exam.

Course Evaluation

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>4 Quizzes (30 pts each)</td>
<td>120</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
</tr>
<tr>
<td>5 Assignments (20 pts each)</td>
<td>100</td>
</tr>
<tr>
<td>5 Discussions (20 pts each)</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>520</strong></td>
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Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>B-</td>
<td>90-92.99%</td>
</tr>
<tr>
<td>B</td>
<td>87-89.99%</td>
</tr>
<tr>
<td>B+</td>
<td>83-86.99%</td>
</tr>
<tr>
<td>C-</td>
<td>80-82.99%</td>
</tr>
<tr>
<td>C</td>
<td>77-79.99%</td>
</tr>
<tr>
<td>C+</td>
<td>73-76.99%</td>
</tr>
<tr>
<td>D-</td>
<td>67-69.99%</td>
</tr>
<tr>
<td>D</td>
<td>60-66.99%</td>
</tr>
<tr>
<td>D+</td>
<td>0-59.99%</td>
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Page 2 of 6
University Policies and Resources

**URI Honor System:** Students are responsible for being familiar with and adhering to University Honor System. URI’s Student Handbook (http://web.uri.edu/studentconduct/student-handbook/) provides guidelines concerning academic honesty. Students are expected to be honest in all academic work. A student’s name on any written work, quiz or exam shall be regarded as assurance that the work is the result of the student’s own independent thought and study. Work should be stated in the student’s own words, properly attributed to its source. Students have an obligation to know how to quote, paraphrase, summarize, cite and reference the work of others with integrity. *The name of any student who cheats on an assignment or exam will be turned into the Vice President of Student Affairs.*

**Disability Services for Students Statement:** Your access in this course is important. Please send me your Disability Services for Students (DSS) accommodation letter early in the semester so that we have adequate time to discuss and arrange your approved academic accommodations. If you have not yet established services through DSS, please contact them to engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom. DSS can be reached by calling: 401-874-2098, visiting: web.uri.edu/disability, or emailing: dss@etal.uri.edu. We are available to meet with students enrolled in Kingston as well as Providence courses.

**Religious Holy Days:** Sections 8.51.11-12 of the University Manual (http://web.uri.edu/manual/chapter-8/chapter-8-4/): 8.51.11 Students who plan to be absent from classes or examinations for religious holy days that traditionally preclude secular activity (see 6.20.11 for how such information is made available) shall discuss this with the appropriate instructor(s) in advance of the holy day. The instructor(s) shall then make one of the following options available: a. the same quiz, test, or examination to be administered either before or after the normally scheduled time; b. a comparable alternative quiz, test, or examination to be administered either before or after the scheduled time; c. an alternative weighting of the remaining evaluative components of the course which is mutually acceptable to the student and instructor(s).

**University Sanctioned Events:** Students who expect to be absent from classes or examinations for University sanctioned events shall discuss this with the instructor at least one week in advance of the sanctioned event(s). The instructor concerned shall then offer the student an alternative listed in section 8.51.11 of the University Manual (http://www.uri.edu/facsen/8.50-8.57.html). For these purposes University sanctioned events shall be those events approved for class excuses by the Provost and Vice President for Academic Affairs, a Vice President, a Dean, or the Director of Intercollegiate Athletics. No event shall be regarded as University sanctioned until the Provost and Vice President for Academic Affairs has been notified. Disagreements over the validity of an event being categorized as University sanctioned shall be mediated by the Provost and Vice President for Academic Affairs. If agreement cannot be reached, the Provost and Vice President for Academic Affairs shall decide the matter and that decision shall be final.

- Students are expected to make arrangements to complete any exams/assignments/other projects prior to the absence.
- It is the student’s responsibility to make the instructor aware of all absences during the semester in a timely fashion.

**Technology Proficiency:** The Department of Kinesiology expects its students and graduates to be proficient in the use of technology to retrieve and process information, and to communicate professionally using a variety of media. The specific tools and skills required varies with individual courses, but in general, students should be proficient in web navigation and search engines, word processing, spreadsheet manipulation, and basic graphing tasks.
Technology requirements of this course include:

- Using the Internet to conduct research and complete online assignments, quizzes and exams.
- Using word processing and PowerPoint for completion of course assignments.
- Communicating with the instructor and other students in the class via email.
- Use of the Brightspace learning management system.

**Academic Enhancement Center:** Located in Roosevelt Hall, the AEC offers free face-to-face and web-based services to undergraduate students seeking academic support. Peer tutoring is available for STEM-related courses by appointment online and in-person. The Writing Center offers peer tutoring focused on supporting undergraduate writers at any stage of a writing assignment. The UCS160 course and academic skills consultations offer students strategies and activities aimed at improving their studying and test-taking skills. Complete details about each of these programs, up-to-date schedules, contact information and self-service study resources are all available on the AEC website, uri.edu/aec.

**Anti-Bias Syllabus Statement:** We respect the rights and dignity of each individual and group. We reject prejudice and intolerance, and we work to understand differences. We believe that equity and inclusion are critical components for campus community members to thrive. If you are a target or a witness of a bias incident, you are encouraged to submit a report to the URI Bias Response Team at www.uri.edu/brt. There you will also find people and resources to help.

**Other Assistance:** Are you or someone you know experiencing a hardship, such as at risk for going hungry or no place to live? If so, URI has resources to provide confidential help. Rhody Outpost provides URI students who are food insecure with emergency food services and resources. Rhody Outpost is housed at St. Augustine’s Episcopal Church on 15 Lower College Road. Contact them at rhodyoutpost@gmail.com, or 401-874-2568. Please contact the Office of Vice President for Student Affairs at 401-874-2427 for help with emergency housing.
KIN/BIO 300: Physiology of Exercise  
Tentative Schedule – Summer 2021

*Initial discussion posts are due 11:59 p.m. on Thursdays. Discussion replies and all other assignments and quizzes are due 11:59 p.m. on Sundays. The exception to this is the final week of class, when the assignment and final exam are due by 11:59 p.m. Saturday, 7/31.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Check List of Learning Activities &amp; Assessments*</th>
</tr>
</thead>
</table>
| 1 (5/24-5/30) Module 1 | Course Introduction  
Bioenergetics & Anaerobic Pathways | ☐ Watch Intro video  
☐ Read Syllabus  
☐ Read Start Here section  
☐ Read Chapter 1  
☐ Watch 2 Review Videos  
☐ Read Chapter 2  
☐ Watch Intro to Bioenergetics Videos  
☐ Watch Glycolysis Videos  
☐ Complete Discussion 1 – Introductions |
| 2 (5/31-6/6) Module 1 | Aerobic Metabolism | ☐ Read Chapter 3  
☐ Watch Krebs Cycle Video  
☐ Watch Electron Transport Chain Video  
☐ Watch Metabolism Review Videos (optional)  
☐ Watch Protein & Fatty Acids Video  
☐ Watch Substrates at Rest & Exercise Video  
☐ Watch Metabolic Recovery Video  
☐ Complete Assignment 1 – Energy Systems  
☐ Submit Module 1 Quiz (due 11:59 p.m. 6/6) |
| 3 (6/5-6/13) Module 2 | Nervous System | ☐ Read Chapter 4  
☐ Watch Physiology of Nervous System Video  
☐ Watch Nervous System During Exercise Video  
☐ Watch Nervous System Adaptations to Training Video  
☐ Complete Discussion 2 |
| 4 (6/14-6/20) Module 2 | Skeletal Muscle System | ☐ Read Chapter 5  
☐ Watch Fiber Types Video  
☐ Watch Sliding Filament Theory Video  
☐ Watch Force Production Video  
☐ Watch Skeletal Muscle Adaptations to Training Video  
☐ Complete Assignment 2  
☐ Submit Module 2 Quiz (due 11:59 p.m. 6/20) |
<table>
<thead>
<tr>
<th>Date</th>
<th>Module</th>
<th>System/Material</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (6/21-6/27)</td>
<td>Module 3</td>
<td>Cardiovascular System</td>
<td>☐ Read Chapter 6&lt;br&gt;☐ Watch Cardiac Cycle and ECG Video&lt;br&gt;☐ Watch Cardiac Output Video&lt;br&gt;☐ Watch Blood Flow Video&lt;br&gt;☐ Complete Discussion 3</td>
</tr>
<tr>
<td>6 (6/28-7/4)</td>
<td>Module 3</td>
<td>Cardiovascular System</td>
<td>☐ Read Chapter 6&lt;br&gt;☐ Watch Resting Adaptations to the CV System Video&lt;br&gt;☐ Watch Changes in CV System During Exercise Video&lt;br&gt;☐ Watch Exercise Transitions Video&lt;br&gt;☐ Complete Assignment 3&lt;br&gt;☐ Submit Module 3 Quiz (due 11:59 p.m. 7/4)</td>
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<tr>
<td>7 (7/5-7/11)</td>
<td>Module 4</td>
<td>Respiratory System</td>
<td>☐ Read Chapter 7&lt;br&gt;☐ Watch Air Flow &amp; Pulmonary Ventilation Video&lt;br&gt;☐ Watch Lung Capacities &amp; Volumes Video&lt;br&gt;☐ Complete Discussion 4</td>
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<tr>
<td>8 (7/12-7/18)</td>
<td>Module 4</td>
<td>Respiratory System</td>
<td>☐ Read Chapter 7&lt;br&gt;☐ Watch Gas Exchange Video&lt;br&gt;☐ Watch Gas Transport Video&lt;br&gt;☐ Complete Assignment 4&lt;br&gt;☐ Submit Module 4 Quiz (due 11:59 p.m. 7/18)</td>
</tr>
<tr>
<td>9 (7/19-7/25)</td>
<td>Module 5</td>
<td>Endocrine System &amp; Environmental Challenges</td>
<td>☐ Read Chapter 8&lt;br&gt;☐ Watch Hormone Release &amp; Interactions Video&lt;br&gt;☐ Watch Hormones &amp; Exercise Video&lt;br&gt;☐ Read Chapter 12&lt;br&gt;☐ Watch Altitude Video&lt;br&gt;☐ Complete Discussion 5</td>
</tr>
<tr>
<td>10 (7/26-7/31)</td>
<td>Module 5</td>
<td>Training Adaptations&lt;br&gt;Final Exam</td>
<td>☐ Watch Training Adaptations Video&lt;br&gt;☐ Complete Assignment 5&lt;br&gt;☐ Take Final Exam (DUE 11:59 p.m. SATURDAY 7/31)</td>
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