**TRIAL COURSE OR NEW COURSE PROPOSAL**

**SUBMITTED BY:**

<table>
<thead>
<tr>
<th>Department</th>
<th>Biology and Wildlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Robert Coker and Diane Wagner</td>
</tr>
<tr>
<td>Email/Contact</td>
<td><a href="mailto:reoker@alaska.edu">reoker@alaska.edu</a>, <a href="mailto:diane.wagner@alaska.edu">diane.wagner@alaska.edu</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>College/School</th>
<th>Natural Sciences and Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>907 474-6701</td>
</tr>
</tbody>
</table>

**Faculty Contact**

- Robert Coker
- reoker@alaska.edu

1. **ACTION DESIRED**
   (CHECK ONE):
   - Trial Course
   - New Course
   
   **X** New Course

2. **COURSE IDENTIFICATION:**
   - Dept: BIOL
   - Course #: 4XX
   - No. of Credits: 3

   **Course is intended for senior and graduate level students with a grasp of basic physiological mechanisms**

3. **PROPOSED COURSE TITLE:**
   - Exercise Physiology

4. **To be CROSS LISTED?**
   - YES/NO
   - No
   - If yes, Dept: 
   - Course #: 

   **NOTE**: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

5. **To be STACKED?**
   - YES/NO
   - Yes
   - If yes, Dept: 
   - Course #: 

   **Graduate students are expected to complete two written literature review assignments based on primary literature on exercise physiology for 40% of their grade. Undergraduates will not complete literature reviews.**

6. **FREQUENCY OF OFFERING:**
   - Every year
   - Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

   - Fall 2015

8. **COURSE FORMAT:**
   **NOTE**: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the Core Review Committee.

   **COURSE FORMAT:**
   (check all that apply)
   - 1
   - 2
   - 3
   - 4
   - 5
   - x
   - 6 weeks to full semester

   **OTHER FORMAT (specify)**
   - Lecture

9. **CONTACT HOURS PER WEEK:**
   - LECTURE hours/weeks: 3
   - LAB hours/week: 
   - PRACTICUM hours/week: 

   **Note**: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See http://www.ua.edu/uaegov/faculty-senate/curriculum/course-degree-procedures/guidelines-for-computing/ for more information on number of credits.

   **OTHER HOURS (specify type)**
10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

Example of a complete description:

FISH F487 W, O Fisheries Management
3 Credits Offered Spring
Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. Prerequisites: COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor. Cross-listed with NRM F487. (3+0)

BIOL F4XX Exercise Physiology

3 Credits
Offered Fall Semester

Physiological responses and adaptation to exercise in humans, emphasizing energy metabolism, adipose and lean tissue, central and peripheral components of oxidative metabolism, and the environmental influences on these parameters. Prerequisites: BIOL F213X and F214X; or BIOL F310; or permission of instructor. Stacked with BIOL F6XX. (3+0)

BIOL F6XX Exercise Physiology

3 Credits
Offered Fall Semester

Physiological responses and adaptation to exercise in humans, emphasizing energy metabolism, adipose and lean tissue, central and peripheral components of oxidative metabolism, and the environmental influences on these parameters. Prerequisites: Graduate standing or permission of instructor. Stacked with BIOL F4XX. (3+0)

11. COURSE CLASSIFICATIONS: Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

H = Humanities  S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? YES:  NO: x
 IF YES, check which core requirements it could be used to fulfill:
 O = Oral Intensive, Format 6  W = Writing Intensive, Format 7  X = Baccalaureate Core

11.A Is course content related to northern, arctic or circumpolar studies? YES:  NO: x

“snowflake” symbol will be added in the printed Catalog, and flagged in Banner.

12. COURSE REPEATABILITY:

Is this course repeatable for credit? YES  NO: x

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?

If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course?

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?
13. GRADING SYSTEM: Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change – Format 2 form.

LETTER: x   PASS/FAIL: 

14. PREREQUISITES

Biol 213X and 214X; or Biol 310; or permission of instructor

These will be required before the student is allowed to enroll in the course.

15. SPECIAL RESTRICTIONS, CONDITIONS

16. PROPOSED COURSE FEES

S0

Has a memo been submitted through your dean to the Provost for fee approval? Yes/No

No

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously?

Yes/No

Yes

If yes, give semester, year, course #, etc.:

Fall 2014 as Biol 394

18. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE IN BUDGET, FACILITIES/SPACE, FACULTY, ETC.

This course will require standard classroom space for lectures and laboratory space for occasional demonstrations, which will take place in the instructor’s CANHR laboratory in Arctic Health Research Bldg.

19. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No x Yes

Current library holdings are sufficient for the trial offering.

20. IMPACTS ON PROGRAMS/DEPTS

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

The course will impact the Biological Sciences graduate and undergraduate programs by providing a new elective course. We do not anticipate that it will impact other programs.

21. POSITIVE AND NEGATIVE IMPACTS

Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

The positive impact of the course will be to provide an additional elective course that is likely to be of high interest for undergraduate students pursuing a Physiology concentration in the Biological Sciences degree and those more generally interested in human health. Graduate students in the Biological Sciences will also be able to enroll in the course potentially furthering their interest in research related to exercise, sport and/or work physiology. The course is part of the regular workload of the faculty instructor. No negative impacts are anticipated.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

This course will contribute to the Biological Sciences curriculum by providing an upper division elective focused on human health and physiology, a growing part of the curriculum and an area of high student interest.
APPROVALS: Add additional signature lines as needed.

Signature, Chair, Program/Department of:  
Date

Signature, Chair, College/School Curriculum Council for:  
Date

Signature, Dean, College/School of:  
Date

Offerings above the level of approved programs must be approved in advance by the Provost.

Signature of Provost (if above level of approved programs)  
Date

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

Signature, Chair  
Date

Faculty Senate Review Committee:  
___Curriculum Review  
___GAAC  
___Core Review  
___SADAC

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

Signature, Chair, Program/Department of:  
Date: 10/11/2014  
Biology & Wildlife

Signature, Chair, College/School Curriculum Council for:  
Date: 10-16-19  
CNSM

Signature, Dean, College/School of:  
Date: 10/16/19  
CNSM
1. Course Information
Exercise Physiology
Biology 6xx
3 Credit Hours
Prerequisites: Graduate standing or permission of instructor
Fall 2014

2. Professor:
Robert H. Coker, PhD, FACSM
Office: 226 Arctic Health Research Building
Office Hours: 10:00 AM-12:00 PM (MWF), and by appointment

Fitness and Performance, Eighth Edition; Also supplementary readings as posted on Blackboard.

4. Course Description: Physiological responses and adaptation to exercise in humans, emphasizing
energy metabolism, adipose and lean tissue, central and peripheral components of oxidative
metabolism, and the environmental influences on these parameters.

5. Course Goals:
The primary focal points of this course are directed at the neural, cardiorespiratory, skeletal, muscular
systems, and how they respond and/or adapt to the stress of acute and chronic exercise. The
complex interaction between environmental stressors on exercise performance will also be covered.
This course will provide a solid foundation for advanced study in the field of exercise physiology.

6. Student Learning Outcomes:

1. Demonstrated knowledge of the acute responses and chronic adaptations to aerobic and
resistance exercise.
2. Demonstrated knowledge of the physiological assessments for muscular and cardiorespiratory
responses to exercise.
3. Demonstrated knowledge of the scientific literature in two areas of investigation.
4. Gain an understanding to research methods in Exercise Physiology.

7. Instructional Methods: A lecture and discussion based model will be used in this course. Students
will be given the opportunity to answer questions posed by the Professor. As part of the requirements
of the course, students will also make a one brief presentation of a research article that specifically
relates to the current section of the course (ie., respiratory, muscle, etc.).

8. Course Calendar:

Class Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/04/14</td>
<td>1</td>
<td>Physiology of Exercise in the US: Past and Future</td>
</tr>
<tr>
<td>09/09/14</td>
<td>2</td>
<td>Control of the Internal Environment</td>
</tr>
<tr>
<td>09/11/14</td>
<td>3</td>
<td>Bioenergetics</td>
</tr>
<tr>
<td>09/16/14</td>
<td>4</td>
<td>Exercise Metabolism</td>
</tr>
<tr>
<td>09/18/14</td>
<td>EXAM 1</td>
<td></td>
</tr>
<tr>
<td>09/23/14</td>
<td>5</td>
<td>Hormonal Responses to Exercise</td>
</tr>
<tr>
<td>09/25/14</td>
<td>6</td>
<td>Measurement of Work, Power, and Energy Expenditure</td>
</tr>
<tr>
<td>09/30/14</td>
<td>7</td>
<td>The Nervous System: Structure and Control of Movement</td>
</tr>
<tr>
<td>10/02/14</td>
<td>8</td>
<td>Skeletal Muscle: Structure and Function</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>10/07/14</td>
<td>EXAM 2</td>
<td></td>
</tr>
<tr>
<td>10/09/14</td>
<td>Chapter 9 Circulatory Adaptations to Exercise</td>
<td></td>
</tr>
<tr>
<td>10/14/14</td>
<td>Chapter 10 Respiration during Exercise</td>
<td></td>
</tr>
<tr>
<td>10/16/14</td>
<td>Chapter 11 Acid Base Balance during Exercise</td>
<td></td>
</tr>
<tr>
<td>10/21/14</td>
<td>Chapter 12 Temperature Regulation</td>
<td></td>
</tr>
<tr>
<td>10/23/14</td>
<td>Chapter 13 The Physiology of Training: Effect on VO2 max, performance, homeostasis and strength</td>
<td></td>
</tr>
<tr>
<td>10/28/14</td>
<td>EXAM 3</td>
<td></td>
</tr>
<tr>
<td>10/30/14</td>
<td>Chapter 14 Patterns in Health and Disease: Epidemiology and Physiology</td>
<td></td>
</tr>
<tr>
<td>11/04/14</td>
<td>Chapter 15 Work Tests to Evaluate Cardiorespiratory Fitness</td>
<td></td>
</tr>
<tr>
<td>11/06/14</td>
<td>Chapter 16 Exercise Prescriptions for Health and Fitness</td>
<td></td>
</tr>
<tr>
<td>11/11/14</td>
<td>Chapter 17 Exercise for Special Populations</td>
<td></td>
</tr>
<tr>
<td>11/13/14</td>
<td>Chapter 18 Body Composition and Nutrition for Health</td>
<td></td>
</tr>
<tr>
<td>11/18/14</td>
<td>Chapter 19 Factors Affecting Performance</td>
<td></td>
</tr>
<tr>
<td>11/20/14</td>
<td>Chapter 20 Work Tests to Evaluate Performance</td>
<td></td>
</tr>
<tr>
<td>11/25/14</td>
<td>Chapter 21 Training for Performance</td>
<td></td>
</tr>
<tr>
<td>12/2/14</td>
<td>Chapter 22 Training for Female Athlete, Children, and Special Populations</td>
<td></td>
</tr>
<tr>
<td>12/04/14</td>
<td>Chapter 23 Nutrition, Body Composition, and Performance</td>
<td></td>
</tr>
<tr>
<td>12/09/14</td>
<td>Chapter 24 Exercise and the Environment</td>
<td></td>
</tr>
<tr>
<td>12/11/14</td>
<td>Chapter 25 Ergogenic Aids</td>
<td></td>
</tr>
<tr>
<td>TBA</td>
<td>EXAM 4 – Final</td>
<td></td>
</tr>
</tbody>
</table>

9. **Course Policies:** Honor Code and Plagiarism: Students will be expected to uphold the UAF standard of conduct for students relating to academic dishonesty. Students will assume full responsibility for the content and integrity of the academic work submitted by them during the course. For the student code or additional information, please use the following URL http://www.uaf.edu/catalog/current/academics/regs3.html

10. **Evaluation:**
Student performance will be based on four primary components 1) exams, 2) quizzes, 3) oral presentation, and 4) two literature reviews on two topics relevant to the course. The sum of these four components = 100 points.

**Calculation of Grade:** In brief, A = 90-100, B = 80-89, C = 70-79, D = 65-69, F = 64 or below. The grade in the course will be based on the accumulation of 100 possible points described above.

**Exams:** Four exams will be given during the course, including a final exam. One of these exams will be administered and graded prior to mid-term so that students can accurately assess their initial performance in the course. Each exam will be worth 10 points for graduate students.

**Quizzes:** Ten quizzes will be given during or following lecture. Each quiz will be worth one point, and is designed to promote attendance and reinforce acquisition of core objectives.

**Oral Presentation:** Worth 10 points towards the final grade, each student will present one research article in the field of exercise physiology. This article will be specifically relevant to the section discussed. Students will cover the rationale, methods, results and discussion sections of the article.
Literature Review: Each of the literature reviews will be worth 20 points highlighting the importance of scientific interpretation in the field of exercise physiology.

11. Support Services: Tutoring is not specifically available but students are urged to contact Dr. Coker to get additional guidance on course material.

12. Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. **If students require any assistance due to documented disability, please make the Professor aware of this important need by the 2nd week of semester, and they will make the necessary accommodations.**
1. Course Information
   Exercise Physiology
   Biology 4xx
   3 Credit Hours
   Prerequisites: Graduate standing or permission of instructor
   Fall 2014

2. Professor:
   Robert H. Coker, PhD, FACSM
   Office: 226 Arctic Health Research Building
   Office Hours: 10:00 AM-12:00 PM (MWF), and by appointment

   Fitness and Performance, Eighth Edition; Also supplementary readings as posted on Blackboard.

4. Course Description: Physiological responses and adaptation to exercise in humans, emphasizing
   energy metabolism, adipose and lean tissue, central and peripheral components of oxidative
   metabolism, and the environmental influences on these parameters.

5. Course Goals:
   The primary focal points of this course are directed at the neural, cardiorespiratory, skeletal, muscular
   systems, and how they respond and/or adapt to the stress of acute and chronic exercise. The
   complex interaction between environmental stressors on exercise performance will also be covered.
   This course will provide a solid foundation for advanced study in the field of exercise physiology.

6. Student Learning Outcomes:
   1. Demonstrated knowledge of the acute responses and chronic adaptations to aerobic and
      resistance exercise.
   2. Demonstrated knowledge of the physiological assessments for muscular and cardiorespiratory
      responses to exercise.
   3. Gain an understanding to research methods in Exercise Physiology.

7. Instructional Methods: A lecture and discussion based model will be used in this course. Students
   will be given the opportunity to answer questions posed by the Professor. As part of the requirements
   of the course, students will also make a one brief presentation of a research article that specifically
   relates to the current section of the course (i.e., respiratory, muscle, etc.).

8. Course Calendar:

   **Class Schedule**
   
<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/04/14</td>
<td>1</td>
<td>Physiology of Exercise in the US: Past and Future</td>
</tr>
<tr>
<td>09/09/14</td>
<td>2</td>
<td>Control of the Internal Environment</td>
</tr>
<tr>
<td>09/11/14</td>
<td>3</td>
<td>Bioenergetics</td>
</tr>
<tr>
<td>09/16/14</td>
<td>4</td>
<td>Exercise Metabolism</td>
</tr>
<tr>
<td>09/18/14</td>
<td>1</td>
<td>EXAM 1</td>
</tr>
<tr>
<td>09/23/14</td>
<td>5</td>
<td>Hormonal Responses to Exercise</td>
</tr>
<tr>
<td>09/25/14</td>
<td>6</td>
<td>Measurement of Work, Power, and Energy Expenditure</td>
</tr>
<tr>
<td>09/30/14</td>
<td>7</td>
<td>The Nervous System: Structure and Control of Movement</td>
</tr>
<tr>
<td>10/02/14</td>
<td>8</td>
<td>Skeletal Muscle: Structure and Function</td>
</tr>
<tr>
<td>10/07/14</td>
<td>1</td>
<td>EXAM 2</td>
</tr>
<tr>
<td>Date</td>
<td>Chapter</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>10/09/14</td>
<td>Chapter 9</td>
<td>Circulatory Adaptations to Exercise</td>
</tr>
<tr>
<td>10/14/14</td>
<td>Chapter 10</td>
<td>Respiration during Exercise</td>
</tr>
<tr>
<td>10/16/14</td>
<td>Chapter 11</td>
<td>Acid Base Balance during Exercise</td>
</tr>
<tr>
<td>10/21/14</td>
<td>Chapter 12</td>
<td>Temperature Regulation</td>
</tr>
<tr>
<td>10/23/14</td>
<td>Chapter 13</td>
<td>The Physiology of Training: Effect on VO2 max, performance, homeostasis and strength</td>
</tr>
<tr>
<td>10/28/14</td>
<td>EXAM 3</td>
<td></td>
</tr>
<tr>
<td>10/30/14</td>
<td>Chapter 14</td>
<td>Patterns in Health and Disease: Epidemiology and Physiology</td>
</tr>
<tr>
<td>11/04/14</td>
<td>Chapter 15</td>
<td>Work Tests to Evaluate Cardiorespiratory Fitness</td>
</tr>
<tr>
<td>11/06/14</td>
<td>Chapter 16</td>
<td>Exercise Prescriptions for Health and Fitness</td>
</tr>
<tr>
<td>11/11/14</td>
<td>Chapter 17</td>
<td>Exercise for Special Populations</td>
</tr>
<tr>
<td>11/13/14</td>
<td>Chapter 18</td>
<td>Body Composition and Nutrition for Health</td>
</tr>
<tr>
<td>11/18/14</td>
<td>Chapter 19</td>
<td>Factors Affecting Performance</td>
</tr>
<tr>
<td>11/20/14</td>
<td>Chapter 20</td>
<td>Work Tests to Evaluate Performance</td>
</tr>
<tr>
<td>11/25/14</td>
<td>Chapter 21</td>
<td>Training for Performance</td>
</tr>
<tr>
<td>12/02/14</td>
<td>Chapter 22</td>
<td>Training for Female Athlete, Children, and Special Populations</td>
</tr>
<tr>
<td>12/04/14</td>
<td>Chapter 23</td>
<td>Nutrition, Body Composition, and Performance</td>
</tr>
<tr>
<td>12/09/14</td>
<td>Chapter 24</td>
<td>Exercise and the Environment</td>
</tr>
<tr>
<td>12/11/14</td>
<td>Chapter 25</td>
<td>Ergogenic Aids</td>
</tr>
<tr>
<td>TBA</td>
<td>EXAM 4 - Final</td>
<td></td>
</tr>
</tbody>
</table>

9. **Course Policies:** Honor Code and Plagiarism: Students will be expected to uphold the UAF standard of conduct for students relating to academic dishonesty. Students will assume full responsibility for the content and integrity of the academic work submitted by them during the course. For the student code or additional information, please use the following URL http://www.uaf.edu/catalog/current/academics/regs3.html

10. **Evaluation:**
Student performance will be based on four primary components 1) exams, 2) quizzes, and 3) oral presentation. The sum of these three components = 100 points.

**Calculation of Grade:** In brief, A = 90-100, B = 80-89, C = 70-79, D = 65-69, F = 64 or below. The grade in the course will be based on the accumulation of 100 possible points described above.

**Exams:** Four exams will be given during the course, including a final exam. One of these exams will be administered and graded prior to mid-term so that students can accurately assess their initial performance in the course. Each exam will be worth 20 points.

**Quizzes:** Ten quizzes will be given during or following lecture. Each quiz will be worth one point, and is designed to promote attendance and reinforce acquisition of core objectives.

**Oral Presentation:** Worth 10 points towards the final grade, each student will present one research article in the field of exercise physiology. This article will be specifically relevant to the section discussed. Students will cover the rationale, methods, results and discussion sections of the article.

11. **Support Services:** Tutoring is not specifically available but students are urged to contact Dr. Coker to get additional guidance on course material.
12. Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. **If students require any assistance due to documented disability, please make the Professor aware of this important need by the 2nd week of semester, and they will make the necessary accommodations.**