

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).

See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.**TRIAL COURSE OR NEW COURSE PROPOSAL****SUBMITTED BY:**

Department	Biology and Wildlife	College/School	Natural Sciences and Mathematics
Prepared by	Robert H. Coker	Phone	907 474-6701
Email Contact	rcoker@alaska.edu	Faculty Contact	Robert Coker

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

2. COURSE IDENTIFICATION: Dept **BIOL** Course # **494** No. of Credits **3**

Justify upper/lower division status & number of credits: **Course is intended for junior and senior level students with a grasp of basic physiological mechanisms**

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

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

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? **No** If yes, Dept. Course #
YES/NO

How will the two course levels differ from each other? How will each be taught at the appropriate level?:

Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

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

7. SEMESTER & YEAR OF FIRST OFFERING (AY2013-14 if approved by 3/1/2013; otherwise AY2014-15) **Fall 2014**

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 6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

9. CONTACT HOURS PER WEEK: **3** LECTURE hours/weeks 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.uaf.edu/uafgov/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)

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 213X and 214X; or BIOL 310; or permission of instructor.* (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? **If YES, attach form.**

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? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.

YES

NO

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES

NO

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?

TIMES

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

CREDITS

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

CREDITS

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:

PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

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**

\$

Has a memo been submitted through your dean to the Provost for fee approval?

Yes/No

17. PREVIOUS HISTORY

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

Yes/No

No

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

18. ESTIMATED IMPACT

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

This course will require classroom and laboratory space.

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

Yes

Current library holdings are sufficient, but improvements will be requested. Contact initiated 05/2013.

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)

This course will contribute to the Biology and Wildlife curriculum by providing a course focused on human health, a growing part of the curriculum and an area of high student interest. The course will likely have little impact on other departments.

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 enhance the understanding of work physiology across the Biological Sciences. 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.

The justification for this course is based on the need to provide upper division credit that is closely linked to the biomedical field for students in the Biological Sciences. For example, students who take the Human and Anatomy Physiology courses may be interested in furthering their interest in metabolic regulation, skeletal muscle metabolism and pulmonary function, and applying that knowledge towards extreme environmental conditions. While previously unavailable, students will now be able to act on their interests, potentially providing greater direction in their career choices.

APPROVALS: Add additional signature lines as needed.

	Date	
Signature, Chair, Program/Department of:		

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

	Date	
Signature, Dean, College/School of:		

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

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

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

	Date	
Signature, Chair Faculty Senate Review Committee: ___ Curriculum Review ___ GAAC ___ Core Review ___ SADAC		

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

	Date	
Signature, Chair, Program/Department of:		

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

	Date	
Signature, Dean, College/School of:		

ATTACH COMPLETE SYLLABUS (as part of this application). This list is online at:

<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:

q Title, q number, q credits, q prerequisites, q location, q meeting time
(make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:

q Name, q office location, q office hours, q telephone, q email address.

3. Course readings/materials:

q Course textbook title, q author, q edition/publisher.

q Supplementary readings (indicate whether q required or q recommended) and

q any supplies required.

4. Course description:

q Content of the course and how it fits into the broader curriculum;

q Expected proficiencies required to undertake the course, if applicable.

q Inclusion of catalog description is *strongly* recommended, and

q Description in syllabus must be consistent with catalog course description.

5. q Course Goals (general), and (see #6)

6. q Student Learning Outcomes (more specific)

7. Instructional methods:

q Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:

q A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

9. Course policies:

q Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:

q Specify how students will be evaluated, q what factors will be included, q their relative value, and q how they will be tabulated into grades (on a curve, absolute scores, etc.) q Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":

http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf

11. Support Services:

q Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

12. Disabilities Services: Note that the phone# and location have been **updated**. <http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

q State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655) to provide reasonable accommodation to students with disabilities.

5/21/2013

Exercise Physiology
Biology 394
Fall 2014

Professor: Robert H. Coker, PhD, FACSM
Teaching Assistant: Tyler Keshel, MS
Office: 226 Arctic Health Research Building
Office Hours: 10:00 AM-12:00 PM, and by appointment

Overview: Basic human anatomy and physiology is a core competency that is necessary for the study of exercise physiology. 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.

Catalog 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.

Prerequisites: 1 year of Human Anatomy and Physiology, 1 semester of Chemistry, 1 semester of Algebra. If a student enrolls in the course without these prerequisites, they will be withdrawn from the course.

Course Objectives:

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. Introduction to research methods.

Required Textbook: Powers S, and Howley E, Exercise Physiology: Theory and Application to Fitness and Performance, Eighth Edition.

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.).

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

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 possible 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.

Calculation of Grade: In brief, A = 90-100, B = 80-89, C = 70-79, D = 65-69, F = 64 or below. Grades will represent an average of course requirements.

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>

UAF 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.*

Schedule of Coursework:

- Chapter 1 Physiology of Exercise in the US: Past and Future
- Chapter 2 Control of the Internal Environment
- Chapter 3 Bioenergetics
- Chapter 4 Exercise Metabolism
- Chapter 5 Hormonal Responses to Exercise
- Chapter 6 Measurement of Work, Power, and Energy Expenditure
- Chapter 7 The Nervous System: Structure and Control of Movement
- Chapter 8 Skeletal Muscle: Structure and Function
- Chapter 9 Circulatory Adaptations to Exercise
- Chapter 10 Respiration during Exercise
- Chapter 11 Acid Base Balance during Exercise
- Chapter 12 Temperature Regulation
- Chapter 13 The Physiology of Training: Effect on VO₂ max, performance, homeostasis and strength

- Chapter 14 Patterns in Health and Disease: Epidemiology and Physiology
- Chapter 15 Work Tests to Evaluate Cardiorespiratory Fitness
- Chapter 16 Exercise Prescriptions for Health and Fitness
- Chapter 17 Exercise for Special Populations
- Chapter 18 Body Composition and Nutrition for Health

- Chapter 19 Factors Affecting Performance
- Chapter 20 Work Tests to Evaluate Performance
- Chapter 21 Training for Performance
- Chapter 22 Training for Female Athlete, Children, and Special Populations
- Chapter 23 Nutrition, Body Composition, and Performance
- Chapter 24 Exercise and the Environment
- Chapter 25 Ergogenic Aids