Revised

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RECEIVED
OCT 14 2014
Dean's Office
College of Natural Science & Mathematics

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 Coker and Diane Wagner**	**Phone**	**907 474-6701**
Email Contact	**rcoker@alaska.edu, diane.wagner@alaska.edu**	**Faculty Contact**	**Robert Coker rcoker@alaska.edu**

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

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

Justify upper/lower division status & number of credits: **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 #

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

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: **Every year**

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

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)

Governance
10/17/14 TLP

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? **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**	x

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?		**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: x **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 **$0**

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 ON 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 Yes x **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.

	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	10/1/2014
Signature, Chair, Program/Department of:	Biology + Wildlife	
	Date	10-16-14
Signature, Chair, College/School Curriculum Council for:	CNSM	
	Date	10/16/14
Signature, Dean, College/School of:	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

3. Course Readings: Powers S, and Howley E, Exercise Physiology: Theory and Application to 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

09/04/14	Chapter 1	Physiology of Exercise in the US: Past and Future
09/09/14	Chapter 2	Control of the Internal Environment
09/11/14	Chapter 3	Bioenergetics
09/16/14	Chapter 4	Exercise Metabolism
09/18/14	EXAM 1	
09/23/14	Chapter 5	Hormonal Responses to Exercise
09/25/14	Chapter 6	Measurement of Work, Power, and Energy Expenditure
09/30/14	Chapter 7	The Nervous System: Structure and Control of Movement
10/02/14	Chapter 8	Skeletal Muscle: Structure and Function

10/07/14	EXAM 2	
10/09/14	Chapter 9	Circulatory Adaptations to Exercise
10/14/14	Chapter 10	Respiration during Exercise
10/16/14	Chapter 11	Acid Base Balance during Exercise
10/21/14	Chapter 12	Temperature Regulation
10/23/14	Chapter 13	The Physiology of Training: Effect on VO2 max, performance, homeostasis and strength
10/28/14	EXAM 3	
1030/14	Chapter 14	Patterns in Health and Disease: Epidemiology and Physiology
11/04/14	Chapter 15	Work Tests to Evaluate Cardiorespiratory Fitness
11/06/14	Chapter 16	Exercise Prescriptions for Health and Fitness
11/11/14	Chapter 17	Exercise for Special Populations
11/13/14	Chapter 18	Body Composition and Nutrition for Health
11/18/14	Chapter 19	Factors Affecting Performance
11/20/14	Chapter 20	Work Tests to Evaluate Performance
11/25/14	Chapter 21	Training for Performance
12/02/14	Chapter 22	Training for Female Athlete, Children, and Special Populations
12/04/14	Chapter 23	Nutrition, Body Composition, and Performance
12/09/14	Chapter 24	Exercise and the Environment
12/11/14	Chapter 25	Ergogenic Aids
TBA	EXAM 4 – Final	

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 award 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

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Office: 226 Arctic Health Research Building
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