FORMAT 1

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	**Physics**	**College/School**	**CNSM**
Prepared by	**Curt Szuberla**	**Phone**	
Email Contact	**denewman@alaska.edu**	**Faculty Contact**	**David Newman**

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

2. COURSE IDENTIFICATION: Dept **Physics** Course # **605** No. of Credits **1**

Justify upper/lower division status & number of credits:

3. PROPOSED COURSE TITLE: **Physics Teaching Seminar**

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

(Requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.)

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

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: **Fall and Spring, 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) **AY2013-2014**

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* [X] *6 weeks to full semester*

OTHER FORMAT (specify)

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

9. CONTACT HOURS PER WEEK: **0.5** LECTURE hours/weeks [ ] LAB hours /week **1** 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:

Governance
9/26/12 TCP

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)

Physics 605 Teaching Seminar/Practicum
1 Credit Offered Spring and Fall

This course will give science graduate student both lectures and hands on training in dealing with all aspects of teaching (focused on but not exclusive to the Teaching Assistant level and beyond). We will cover topics in teaching pedagogy, preparation strategies, student management, time management and learning assessment. The course will be approximately 50% interactive lecture/ discussion and 50% practical exercises.
Prerequisites: Graduate Standing in a Science Discipline or permission of instructor

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** [ ] Natural Science, **Format 8** [ ]

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 [X] NO [ ]

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time). **The course can be repeated because topics can be covered in further depth than allowed in one semester.**

How many times may the course be repeated for credit? [2] **TIMES**

If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course? [2] **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: Later changing the grading system for a course constitutes a Major Course Change.

LETTER: [ ] **PASS/FAIL:** [X]

ON ENROLLMENT (if any)

PREREQUISITES **Graduate standing**

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

gistration implications below due to Banner coding of these terms:
urse completed and grade of "C" (2.0) or higher prior to registering for the course that requires it.
ırse may be taken simultaneously (and allows for a course to have been previously completed).
ırses MUST be taken simultaneously and does NOT allow for fact that a course was previously

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

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

18. ESTIMATED IMPACT

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

none

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

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)

Valuable addition for

21. POSITIVE AND NEGATIVE IMPACTS

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

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.

APPROVALS: Add additional signature lines as needed.

	Date	7 SEP 2012	
Signature, Chair, Program/Department of:	PHYSICS		
	Date	9/25/2012	
Signature, Chair, College/School Curriculum Council for:	CNSM		
	Date	9/25/12	
Signature, Dean, College/School of:	CNSM		

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:		

Syllabus for Physics 605
Teaching Seminar/Practicum
1 cr. offered Spring and Fall
This course can be taken 2 times (Spring and Fall) for credit

Prerequisites: Graduate Standing in a Science Discipline or permission of instructor

Location: REIC 122

Time: Lecture/Practicum - Monday, 90 minutes, time TBD,

Instructors: Dr. David Newman, REIC 112, x7858, denewman@alaska.edu
Agatha Light, REIC 114, x7857, aslight@alaska.edu,

Textbook: A New TA's Guide to Teaching Introductory: Physics, Author: K.A. Harper, 2008

Supplemental journal articles:
DeHaan, R. L., 2005: The Impending Revolution in Undergraduate Science Education, Journal of Science Education and Technology, Vol. 14, No. 2, 253-269.

Halloun, I. A, and Hestenes, D. 1985: The initial knowledge state of college physics students, American Journal of Physics, 53, 11, 1043-1048.

Luft, J.A., Kurdziel, J. P., Roehrig, G. H., and J. Turner, 2004: Growing a Garden Without Water: Graduate Teaching Assistants in Introductory Science Laboratories at a Doctoral/Research University, Journal of Research in Science Teaching, Vol. 41, No. 3, 211-233.

Course content:

This course will give science graduate students both lectures and hands on training in dealing with all aspects of teaching (focused on, but not exclusive to, the Teaching Assistant level and beyond). We will cover topics in teaching pedagogy, preparation strategies, student management, time management and learning assessment. The course will be approximately 50% interactive lecture/ discussion and 50% practical exercises. This course is intended to provide both basic introductory and in-depth science teacher training and guidance at the college level.

Student learning outcomes: After this course, students will be know the basics of good practices in university level science education, will be able to deliver clear presentations, both lecture style and in lab format, will have a variety of tools for classroom management and student encouragement and will have extensively discussed and practiced how to be a good science educator/communicator.

The lectures will be given by a variety of instructors with expertise in the specific areas being covered, as well as by the students themselves. The practical exercise part will consist of preparation and presentation of classroom and lab examples, as well as practice of active learning strategies. Some of these will be taped and critiqued. Every week, time will be reserved for issues that are brought up by the students who are currently teaching so they can be discussed and solutions proposed by the group. Discussion will be an important part of the course.

Course participants will have some input in special topics covered. Among the topics covered will be:

- Teaching pedagogy - including board skills, speaking skills, grading etc. (students will do practice examples of the good and the bad in these areas), engaging students, idea behind active learning and other techniques for engaging and facilitating student learning
- Preparation - "Why prepare, I know this material!", effective preparation, introducing material, preparing to teach the concepts, preparing to teach the math
- Time management - Balancing demands, short cuts, using your resources
- Student/classroom management - starting out right, engaging students, respect, dealing with problems and student issues, cheating, being adaptable, using support
- Lab preparation and demo development - preparing labs, preparing for the labs, presenting the lab, grading the labs, developing demonstrations for specific topics, reading your audience, encouraging active learning and student participation
- Learning assessment - making quizzes (lab quizzes etc.), grading, encouraging feedback from students, other forms of assessment
- Cross cultural issues - teachers from various cultures and students from various cultures, what's acceptable under cultural differences and what is not, sensitivity to differences
- Ethical issues - plagiarism and other forms of cheating, respect, relationships
- Working with faculty- getting the most from the experience, asking questions
- Personal/Professional balance- Being a student at and an employee of the University

Sample Calendar:

Week	Topic
1	Teaching Pedagogy
2	Preparation
3	Teaching Pedagogy
4	Time Management
5	Teaching Pedagogy
6	Student/classroom management
7	Student/classroom management
8	Lab preparation and demo development
9	Lab preparation and demo development
10	Learning assessment
11	Cross cultural issues
12	Working with faculty, Personal/Professional balance
13	Teaching Pedagogy, Learning assessment
14	Lessons learned during the semester of teaching

Assignments will include reading excerpts from science education text and science education research journal articles as preparation for group discussion and presentation of classroom and lab teaching strategies. Students will also give presentations on topics relevant to course content, which will include preparation of sample work such as quizzes or active learning materials. Each student will give approximately 3 presentations, with supporting sample work, per semester.

Grading: The course will be graded on a pass/fail basis and the grade will consist of the following components (though we reserve the right to make grade adjustments based on performance trends):

Participation 50 %
Presentations 40 %
Sample work 10 %

We will grade on a curve, above 65% will be a passing grade.

Contacting us: Open office hours or contact us for an appointment. We can also be easily contacted via email.

Special Needs: 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. We will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.

Plagiarism etc: Plagiarism and cheating are matters of serious concern for students and academic institutions. This is true in this class as well. The UAF Honor Code (or Student Code of Conduct) defines academic standards expected at the University of Alaska Fairbanks which will be followed in this class. (Taken from the UAF plagiarism web site, which has many links with good information about this topic)

Complaints and Concerns: You are always welcome to talk to me about anything, however, if you have a non-subject matter question or concern that cannot be resolved by me contact the department chair, Dr. Szuberla, Physics Department Office, room 102 NSCI. Finally, you can discuss issues with the Dean of CNSMs office or the University ombudsman.