UCONN | COLLEGE OF LIBERAL ARTS AND SCIENCES

COMMITTEE ON CURRICULA AND COURSES

Proposal to offer a new or continuing 'Special Topics' course (xx95; formerly 298)

Last revised: September 24, 2013

Understanding the unique character of special topics courses: 'Special Topics', in CLAS curricular usage, has a narrow definition: it refers to the content of a course offering approved on a provisional basis for developmental purposes only. Compare this definition with that of variable topics (xx98) courses.

It is proposed by a department and approved conditionally by the college only with a view toward its eventual adoption as a permanent departmental offering. For this reason, such conditional approval may be renewed for not more than three semesters, after which the course must be either brought forward for permanent adoption, or abandoned. The factotum designation xx95 is to be assigned to all such developmental offerings as proposed.

Note: Such courses are normally reviewed by the Chair of CLAS CC&C, and do not require deliberation by the Committee unless questions arise. Courses must be approved prior to being offered, but are not subject to catalog deadlines since they do not appear in the catalog. Special Topics courses are to be employed by regular faculty members to pilot test a new course, with the idea that it is likely to be proposed as a regular course in the future.

Submit one copy of this form by e-mail to the Chair of CLAS after all departmental approvals have been obtained, with the following deadlines:

(1) for Fall listings, by the first Monday in March (2) for Spring listings, by the first Monday in November

1. Date of this proposal: 2/18/14
2. Semester and year this xx95 course will be offered: Fall 2014
3. Department: Marine Sciences
4. Course number and title proposed: 4895
5. Number of Credits: 3
6. Instructor: Dr. Kelly Lombardo
7. Instructor's position: Assistant Professor

(**Note**: in the rare case where the instructor is not a regular member of the department's faculty, please attach a statement listing the instructor's qualifications for teaching the course and any relevant experience).

8. Has this topic been offered before? no If yes, when?

9. Is this a (x) 1st-time, ( ) 2nd-time, ( ) 3rd-time request to offer this topic?
10. Short description: Synoptic-Mesoscale Meteorology
11. Please attach a sample/draft syllabus to first-time proposals. see description below
12. Comments, if comment is called for:
13. Dates approved by:
    Department Curriculum Committee: 2/19/2014
    Department Faculty: 3/14/2014

14. Name, Phone Number, and e-mail address of principal contact person:
Heidi Dierssen, 860-405-9239, heidi.dierssen@uconn.edu

Supporting Documents

If required, attach a syllabus and/or instructor CV to your submission email in separate documents.

4895/5898 Special Topics: Synoptic-Mesoscale Meteorology

Course Description: Fundamentals in atmospheric synoptic-dynamics and mesoscale meteorology, including the equations of motion, potential vorticity thinking, quasi-geostrophic theory, extratropical cyclone dynamics, frontogenesis, atmospheric stability, and coastal mesoscale processes.

Recommended Preparation: MATH 2010 (Need to have seen some partial differential equations); PHYS 1201/2, 1401/2, 1501/2, *OR* 1601/2.

Suggested/Relevant Texts: "An Introduction to Dynamic Meteorology" J. R. Holton; "Synoptic-Dynamic Meteorology in Midlatitudes" H. B. Bluestein; "Mesoscale Meteorology in Midlatitudes" P. Markowski and Y. Richardson

Syllabus Draft:
Week 1: Basic Equations of Motion; Geostrophic Balance; Continuity Equation
Week 2: Vorticity and the Vorticity Equation
Week 3: Potential Vorticity
Week 4: Application of PV theory to real weather
Week 5: Quasi-geostrophic Vorticity and Thermodynamic Equations
Week 6: Quasi-geostrophic Omega and Height Tendency Equation
Week 7: Interpretation of QG Omega Equation and Q-vectors
Week 8: Extratropical Cyclone Dynamics; Baroclinic Waves
Week 9: Coastal Cyclogenesis
Week 10: Frontogenesis Equation and Application to Coastal Fronts
Week 11: Atmospheric Instabilities (Conditional; Potential) and CAPE
Week 12: Lake and Ocean Effect Snow
Week 13: Gravity Waves and Bores
Week 14: Mesoscale Convective Systems
Week 15: Final Exams