

**Ogden College of Science and Engineering
Department of Geography and Geology
Proposal to Create a Temporary Course
(Information Item)**

Contact Person: Xingang Fan, Xingang.fan@wku.edu , 745-5980

1. Identification of proposed course

- 1.1 Course prefix (subject area) and number: GEOG 439
- 1.2 Course title: Atmospheric Modeling
- 1.3 Abbreviated course title: Atmospheric Modeling
- 1.4 Credit hours: 3
- 1.5 Schedule type: Lecture
- 1.6 Prerequisites: CS 245 (Fortran) and GEOG 424
- 1.7 Course description: An introduction to basic numerical modeling techniques and weather/climate models.

2. Rationale

- 2.1 Reason for offering this course on a temporary basis: This course is proposed to be offered in Spring 2011. There is insufficient time to complete the new course approval process.
- 2.2 Relationship of the proposed course to courses offered in other academic units: No other courses covering this material are offered at WKU.

3. Description of proposed course

- 3.1 Course content outline
 - a. Introduction of atmospheric modeling
 - b. Introduction of basic UNIX/Linux operating system
 - c. Introduction of basic Fortran programming
 - d. Model basics: Equations, differentiate schemes, grids
 - e. Model structure and components
 - f. A state-of-the-art weather model: Weather Research and Forecasting (WRF) model
 - g. Input: Initial and boundary conditions
 - h. Running model simulations
 - i. Output: post-processing, analysis
 - j. Visualization
- 3.2 Tentative text(s)
 - a. Atmospheric modeling, data assimilation, and predictability, by Eugenia Kalnay, New York : Cambridge University Press, c2003.
 - b. Fundamentals of Atmospheric Modeling, 2nd Edition, by Mark Z. Jacobson, Cambridge, 2005
 - c. Mesoscale Meteorological Modeling, 2nd Edition, by Roger. A. Pielke Sr., Academic Press, 2002
 - d. A Climate Modelling Primer, 3rd Edition, by K. McGuffie, Wiley, 2005

4. **Term of Implementation:** Spring 2011

5. **Dates of review/approvals:**

Department of Geography and Geology: _____9/9/10_____

Ogden Dean / 9-9-10

Ogden Curriculum Committee _____

UCC Chair _____

Provost: _____

Attachment: Course Inventory Form

Office of the Registrar

COURSE INVENTORY FORM

Check One Create New Course
 Temporary Course Offering

1. Has this course previously been offered on a temporary basis? Yes No If yes, indicate the term offered

2. Subject Area GEOG Course Number 439 Course Title (as it should appear on the transcript; maximum of 30 letters & spaces) ATMOSPHERIC MODELING

3. Term for Implementation (e.g., Spring 2010=201010, Fall 2010=201030) 201110

4. Official Course Title ATMOSPHERIC MODELING

5. Offering Unit (See Table of Code Values.) College SC Department GEO

6. Credit Hours Fixed Credit Hours: 3.00 Variable Credit Hours

7. Repeat Limit (See instructions.) 1 Total Maximum Hours (See instructions.) 3

8. Grading (Check all that apply.) Standard Letter Grading Pass/Fail Only No Grade
 In Progress - IP (Course is intended to span more than one term.)

9. Schedule Type (See Table of Schedule Types.)

10. Corequisites (courses required to be taken concurrently with this course)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

11. Equivalent Courses (Include Community College courses and other equivalent courses.)

Subject Area	Course Number	Subject Area	Course Number	Subject Area	Course Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

12. Prerequisites (See instructions.)

Subject Area	Course Number	AND	Subject Area	Course Number	Subject Area	Course Number
<u>CS</u>	<u>245</u>		<u>GEOG</u>	<u>424</u>	<input type="text"/>	<input type="text"/>

13. Course Attribute Other Honors Course Developmental Course

14. Course Restrictions Include/ Exclude College College Major Major Classification

15. Course Description (Indicate exactly as it should appear in the University Catalog. Include pertinent special information, e.g., course fees, pass/fail grading, field trips, transportation requirements, etc.)

An introduction to basic numerical modeling techniques and weather/climate models.

16. Approvals: Department Head [Signature] Date 9/9/10
 Temporary course: College Dean [Signature] Date 8-8-10
 Graduate Dean _____ Date _____
 University Curriculum Committee _____ University Senate _____
 Graduate Council _____

Office of the Registrar Use				
CIP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Banner Data	_____			
Course Description	_____			
Evaluate	_____			