

This course is available for student registration only after the approval process has been completed.

SUBJECT BIO COURSE NO. 4420 CREDIT HOURS 1 TERM TO BE ADDED TO THE FILE Spring 2007  
Alpha Prefix (e.g., CSE) Number Choice (e.g., 1301) (e.g., Fall 2006)

CLASS HOURS 1 LECTURE HOURS 1 LAB HOURS 0 CONTACT HOURS (CEU ONLY) \_\_\_\_\_

DEPARTMENT Biological Sciences SCHEDULE TYPE Lecture  
(e.g., Computer Sciences) (e.g., Lecture, Lab or Special Project)

- COLLEGE OF AERONAUTICS-23
- COLLEGE OF BUSINESS-24
- COLLEGE OF ENGINEERING-01
- COLLEGE OF PSYCHOLOGY AND LIBERAL ARTS-25
- COLLEGE OF SCIENCE-26
- UNIVERSITY COLLEGE EXTENDED STUDIES-27

COMPUTER TITLE Restricted to 25 characters, including spaces Pre-Columbian Ecosystems

CATALOG TITLE Pre-Columbian Ecosystems

CATALOG DESCRIPTION OF COURSE Limited to 350 characters, including spaces

An ecologically-oriented investigation of the extent to which Pre-Columbian occupants of the Americas influenced ecosystems. Archaeological, anthropological, and ecological data will contribute to our understanding of key debates regarding what is "natural" in the Americas.

In addition, you may attach a course syllabus and/or more detailed description.

RESTRICTIONS:  Prerequisite BIO 3410  Corequisite \_\_\_\_\_  
Course Number Course Number

Prerequisite \_\_\_\_\_  Corequisite \_\_\_\_\_  
Course Number Course Number

Prerequisite \_\_\_\_\_  Corequisite \_\_\_\_\_  
Course Number Course Number

GRADES TO BE ISSUED  
 A, B, C, D, F  
 A, B, C, D, F, CEU  
 CEU  
 S, U  
 P, F  
 Other \_\_\_\_\_

ADDITIONAL RESTRICTION Junior Standing  
(e.g., Major, Class Level, Department Head Approval)

If this course replaces a course currently offered in BANNER, please indicate old course information

SUBJECT Alpha Prefix (e.g., CSE) \_\_\_\_\_ COURSE NO. (e.g., 1301) \_\_\_\_\_

**APPROVALS: Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Director.**

[Signature] 10/11/06 \_\_\_\_\_  
Originator Date Chair, Graduate Council Date

[Signature] 10-11-06 \_\_\_\_\_  
Department Head/Program Chair OR

[Signature] 10-13-06 \_\_\_\_\_  
Dean or Associate Dean Date Chair, Undergraduate Curriculum Committee Date

**CATALOG DIRECTOR**

These changes/additions have been made for the \_\_\_\_\_  
 University/Extended Studies Catalog and entered into the  
 BANNER term named above.  
 \_\_\_\_\_  
Catalog Director Date

**REGISTRAR'S USE ONLY**

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 SCARRES \_\_\_\_\_ Operator Init \_\_\_\_\_ Date \_\_\_\_\_

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**Addition of New Course to the Curriculum: BIO 4420, 1 credit**

**Instructor: Mark Bush (Biology)**

**Prerequisite: Junior standing, Bio 3410 (General Ecology) or equivalent**

**Course Title: Pre-Columbian Ecosystems**

**Background:** A flurry of archaeological discovery in the 1990s has, pushed back the first occupation of the Americas to before the time of Clovis (the long-held 1<sup>st</sup> Americans), greatly increased the number and area of pre-Columbian settlement, and identified the use of fire and earthworks to transform landscapes from Mexico to Amazonia. In the wake of these discoveries, the pendulum of opinion has swung from Amazonia and the buffalo commons of the American west being natural, to both being manufactured landscapes. This radical view has profound implications for environmental policy and is one of the most pressing conservation issues of the day. A full investigation of the implications and the evidence would make an excellent seminar class. This class is a pre-requisite for the Neotropical Archeoecology field course that investigates some of the tools used to assess pre-historic human influences on ecological systems.

**Catalog description:** An investigation of the extent to which Pre-Columbian occupants of the Americas influenced ecosystems. Archaeological, anthropological, and ecological data will contribute to our understanding of key debates regarding what is "natural" in the Americas.

**Course text:** Mann, C.C. 2005. 1491: New Revelations of the Americas before Columbus, Knopf, New York.

**Additional readings:** (1 each week to be selected by the students)

**Course Syllabus**

**Week 1:** Introduction, organization and overview of data sources.

**Week 2:** Botanical garden foray: learn some of the families of tropical plants that we will be discussing during the semester.

**Weeks 3 –13:** Taking sequential chapters from the book, and finding a matching or countering article from the ecological literature.

Each week 1 student will provide a paper for the others to read and discuss. A 250 word summary reconciling or counterpointing the paper and the chapter for that class will be handed in by every student at the start of each class.

**Week 14:** Denholm et al. Nature 2006 v. 436 entitled the Wilding of America with two additional commentary pieces that followed.

**Week 15:** Botanical garden foray: learn some more common families of tropical plants.

**Grading:** Based on participation (50%) and the weekly writing assignments (50%).

**Table of Contents of Mann 2005 with my notes in parentheses**

1 A view from above (Past Amazonian patterns of land use from the air) 3

2 Why Billington survived (The experiences of early European settlers in Massachusetts) 31

3 In the land of four quarters (Andean Societies) 62

- 4 Frequently asked questions (Mesoamerica and smallpox) 97
- 5 Pleistocene wars (The Clovis debate: the first entry of humans into the Americas) 137
- 6 Cotton (or anchovies) and maize (tales of two civilizations, part I) (Coastal Peruvian civilizations) 174
- 7 Writing, wheels, and bucket brigades (tales of two civilizations, part II) (cultural development and social hierarchies) 204
- 8 Made in America (Mexican civilizations) 243
- 9 Amazonia (self-explanatory) 280
- 10 The artificial wilderness (How naturalists viewed the Americas) 312
- 11 The great law of peace (The biases and perspectives of historians) 329

There are four appendices that will be read with the relevant sections.

Recommended sources for papers presented by students will be:

Science, Nature, Ecology, Ecological Monographs, J. Ecology, Quaternary Research, Palaeo3, The Holocene, Journal of Quaternary Science, Phil. Trans., Proc. Roy. Soc., Journal of Biogeography, Global Ecology and Biogeography, Quaternary Science Reviews.