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CURRICULUM PROPOSAL COVER SHEET

University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Gail S. Sechrist Phone 357-2250

Department Geography and Regional Planning--Geography

II. PROPOSAL TYPE (Check All Appropriate Lines)

X COURSE Introduction to GIS
Suggested 20 character title

 New Course*
Course Number and Full Title

X Course Revision GE 316 Intro to Geographic Information Systems
Course Number and Full Title

 Liberal Studies Approval+
for new or existing course
Course Number and Full Title

 Course Deletion
Course Number and Full Title

X Number and/or Title Change GE 316 Intro to Geographic Information Systems
Old Number and/or Full Old Title

GE/RP 316 Intro to Geographic Information Systems
New Number and/or Full New Title

X Course or Catalog Description Change GE 316 Intro to GIS
Course Number and Full Title

 PROGRAM: Major Minor Track

 New Program*
Program Name

 Program Revision*
Program Name

 Program Deletion*
Program Name

 Title Change
Old Program Name

New Program Name

III. Approvals (signatures and date)

Gail S. Sechrist 9/11/95
Department Curriculum Committee

Susan Fisher 9-11-95
Department Chair

[Signature]
College Curriculum Committee

[Signature] 9/25/95
College Dean

+Director of Liberal Studies (where applicable)

*Provost (where applicable)

Part II. Description of the Curriculum Change

1. New Syllabus of Record.

Introduction to Geographic Information Systems

Catalog Description:

GE 316 Introduction to Geographic Information Systems 3c-01-3sh

Prerequisite: GE 213, or equivalent, or permission of instructor

Automated methods for creating, maintaining, and analyzing spatial data are presented. Topics include 1) specialized GIS hardware and software, 2) vector vs. raster vs. object oriented spatial data structures, 3) creation and manipulation of geographic data files, 4) data base design and management concepts, 5) spatial analysis, and 6) cartographic design. (Also offered as RP 316; may not be taken for duplicate credit.)

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Texts: ARCCAD Users Manual. Environmental Systems Research Institute, Redlands CA.
Other readings as assigned.

Course Objectives: Students will learn both the theoretical basis of Geographic Information Systems and specifics of operating GIS software. By the end of the course students will 1) be able to operate a GIS software system, 2) be able to manipulate geographic data for problem solving, 3) be able to process geographic data for record management, 4) be qualified to perform daily functions associated with maintaining a GIS system, and 5) understand how systems are organized. GIS creation and system design are covered in a sequential course.

Schedule of Activities

<u>Week</u>	<u>Activity</u>
1	Introduction. What is it? What good is it? History of GIS. Who Uses GIS? Applications for GIS. Lab organization and structure. Software and data use. Read Tomlinson: "Current and Potential Uses of GIS: the North American Experience" Chaps 1-2
2	Introduction to AutoCAD

Assignment 1: Familiarizing yourself with AutoCAD
Read AutoCAD Manuals

- 3 AutoCAD II
Assignment 2: Drawing in AutoCAD
Read AutoCAD Manuals
 - 4 Theoretical Background, Spatial Databases, Spatial Database Models,
 Vector-Raster-Object Oriented Data structures.
Assignment 3: More AutoCAD
Read Berry, "It Depends: Implications of Data Structure"
 - 5 Spatial Data Concepts, Data Base Design, Data input, Data Organization
 Working with ArcView. Data Sources.
Assignment 4: ArcView Explorer, Using ArcView
Read Chap 3, Appendix B, Appendix C
 - 6 Basic GIS Operations, Software Systems, Analytic Methods
**Dangermond, "A classification of software components commonly
 used in GIS".**
 - 7 **MIDTERM EXAM**
 - 8 Learning to use ARCCAD I, Linking to AutoCAD
 Theme and Database Creation, data entry
Assignment 5: Maneuvering in ArcCAD **Read Chapter 4, Appendix A**
 - 9 Learning to use ARCCAD II. Display and Query
Assignment 6: Querying an existing system **Read Chapter 5**
 - 10 Learning to use ARCCAD III. Spatial Analytic Functions
Assignment 7: Conducting spatial analysis **Read Chapter 6**
 - 11 Case studies in problem solving and managing GIS systems, GIS as
 Spatial Decision Support Systems, GIS as information management
 systems, GIS as research tool
Assignment 8: Simple problem solving scenarios
**Read W.H. Erik De Man: Establishing a GIS in Relation to its use: a process of
 strategic choices.**
 - 12 Multi-User GIS: constraints and considerations
Assignment 9: Simple problem solving scenarios II
 - 13 Learning to use ARCCAD IV. Making convincing arguments, Remembering
 cartography, tabular report generation. **Read Berry: Maps speak louder than words.**
 - 14 Daily, Weekly, Monthly GIS system mgmt, updating and coflating.
 Trends in GIS
- Final Exam

Evaluation: Student grades are based on exercises, midterm, and final exam. The exercise grades will be combined to equal the weights of the midterm, and final exam. Completion of exercises as instructed will result in 80% of the exercise grade. To receive full credit students

must show initiative and creativity. *Your work must exceed simply following directions; cartographic correctness, attention to detail, and critical self-examination are expected on each item submitted for evaluation.* It is particularly important that maps submitted are as well designed as possible. Exercises are due on time.

LATE EXERCISES WILL BE REDUCED 10% FOR EACH DAY THEY ARE LATE (based on the day I find it). Surprise quizzes and in-class assignments are likely; grades for these will be factored into your exercise grades. The only opportunity to make up the midterm will be offered on at the end of the semester in this room.

2. Summary of the proposed revisions.

- a. Changing the prerequisite from **GE 313** to **GE 213**.
- b. This course is to be cross listed in both Geography as **GE 316 Introduction to GIS** and in Regional Planning as **RP 316 Introduction to GIS**.

3. Rationale for the revision.

- a. With proposed changes to major requirements GE 313 is no longer a core course but an advanced topic area. GE 213 is will be a required core course and as such is more appropriate as the prerequisite. The content taught and skills learned in GE 213 feed directly into the content of GE 316, more so than GE 313.
- b. Cross listing will support curricular flexibility by clearly identifying Regional Planning as a separate major, will improve graduation check out, and will move us toward our goal of program accreditation.

4. Old Syllabus of Record

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