Field-Laboratory of Natural Resources

Mabaye Dia, Ph.D.
Assistant Professor of Geography
Geography Program
Winthrop University
Tel: 803/3232282
Fax: 803/3232254
Email: diam@winthrop.edu

Introduction:
This Field-Laboratory of Natural Resources was a module of the course GEOG 500, Global Environment and Sustainable development. In the literature, which discusses the implication of an ecosystem approach to management, three components are commonly presented. They are the scientific, the social-political, and the ethical (Spooner 1984, Goldstein, 1992, and Lewis 1997). This Field-Laboratory focuses on the common element of these components by demonstrating that enhancing sustainability requires a broad scope, and that human dimension is an integral component (SUI Technical Series, 1996, 1998, 2001). Sustainable Universities Initiatives (SUI) supported this project by a grant of $500.00 to be used for Geographic Information Systems (GIS) and associated expenses.

Purpose and Method
The purpose of this Field-Laboratory is to illustrate a framework within the concept of sustainability for viewing human/nature relationships associated with a protected area, such as Congaree Swamp National Monument in South Carolina.

Human and nature relationships framework (Burch, 1988; Bonnicksen, 1991)

The framework presented here is a very simplified picture of a more complex and deep system. This framework helped the students to integrate the knowledge of people with the knowledge of natural resources. The students have examined the role(s) U. S. National
Park Service, Scientific researchers, and local people played in conserving and using natural resources as a means to promote social, cultural and economic development.

**Outcomes:**
Congaree Swamp National Monument is the largest expanse of old-growth floodplain forest in America and an International Biosphere Reserve. Based on the students’ evaluation, I can affirm that the students not only enjoyed the Field-Laboratory but also saw the big picture of Congaree Swamp National Monument as symbol of reconciliation between the long-term perspectives of international and national interests with the short-term needs of local communities. In other words, this Field Laboratory has allowed the students to collect pertinent data (see figures below)

![Winthrop Students during the Field-Laboratory of Natural Resources at Congaree Swamp National Monument, September 2003](image)

In addition, this Field-Laboratory highlighted the linkage between geography and environment. The SUI-Grant of $500.00 (plus another $500.00 from the College of Arts-and Sciences) has enabled Winthrop University, **for the first time in its history**, to offer a new course in GIS entitled *Introduction to Geographic Information Systems*. I am teaching this spring 2004 semester this indispensable course for geography minors of twenty-four licenses (see Syllabus, page 3). This course is also approved as GEOG 305, Introduction to Geographic Information Systems for Winthrop Undergraduate Catalog 2004-2005. I am using ArcView GIS 3.3 one of today's most popular geographic information system (GIS) software from ESRI-Environmental Systems Research Institute.

**Conclusion:**
The students lied at the center of this Field-Laboratory, which is a parfait example of the environmental slogan “Think Globally, Act Locally” which refers to the argument that to improve the overall quality of the global environment, city hall, local communities, university, etc. may be a good first target for punctual effort. Thus, this Field-Laboratory began with describing **where** Congaree Swamp National Monument is located. But more important, it examined **why** this Monument is located in its place and **how** this monument influences our lives, and **how** people affect it. This semester, my students are using their data to ArcView GIS, a database that connects the what to the where allowing them to see and analyze their data in new and useful ways. On the name of Winthrop University, I thank SUI for its support.
Winthrop University
GEOG 350: Introduction to Geographic Information Systems, Section 001 (10612)
Spring Semester, 2004

Professor: Dr. Mabaye Dia
Office: 320 Life Sciences Building
Office phone: 323 2282
Email address: diam@winthrop.edu
Offices hours:
   320 Life Sciences Building: Monday (10:00 to 12:00), Tuesday (03:30 to 04:50),
   Wednesday (03:30 to 04: 50) and Friday (10:00 to 12:00).

Required Textbook: English, Kim Z. & Feater, Laura S. Community Geography: GIS in
Action, ESRI Press, Redlands, California, 280 pages
Supplies: Using ArcView GIS: The course uses ArcView, a powerful and popular
desktop GIS from Environmental Systems Research Institute (ESRI, Redlands, CA); A course reader of copies of overheads, notes, articles
and assignments; Video Image Productions

Purpose of the course:
This course provides students with the opportunity to understand the principles,
applications, trends, and pertinent issues of geographic information systems. Students
gain a basic, practical understanding of GIS concepts, technical issues, and applications
using ArcView, a powerful and popular GIS-Software from Environmental Systems
Research Institute (ESRI)

Course Objectives:
At the completion of the course the student will:
1. Learn where GIS fits in the world of Information Systems and maps, how it is
   unique and why it is important;
2. Understand the technical language of GIS;
3. Gain practical experience using ArcView, a powerful and popular GIS-Software;
4. Know the issues involved in choosing a GIS package, obtaining and evaluating
data, and implementing and managing a GIS project
5. Understand GIS career options and how to pursue them.

Class Attendance Policy:
The policy of attendance as described in Winthrop University Undergraduate Catalog
(p.41) will be followed. The attendance and participation of the student are important to
the success of the course. There is no way a student who misses three times (without
any justification) can pass this class.

Course Format:
The course includes classroom lecture, discussion and demonstration of geographic information systems, computer presentations, videos, overheads, whiteboard.

Each week the instructor bring to class: GIS books appropriate to the meeting's topic, ArcView manuals and books, maps and plots, data CD-ROMs and sources such as the GIS World Sourcebook, and a variety of handouts.

Students perform practical ArcView exercises on their own computer (ArcView is installed in four computers in SIMS 114)

**Evaluation:**

There will be two (2) midterm examinations and one (1) final exam. The first midterm examination counts 20% and the second counts 20%. The final exam counts 25%. **Examens consist of essays, short answers, objective (multiple-choice, True/False, Matching) questions, and presentations.** In addition, the student must expect a quiz anytime he or she comes to class. Quizzes count 20%. Also, there will be announced and unannounced homeworks (15%). **There will be any makeup unless the student presents an appropriate document.**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dates</th>
<th>Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUIZZES</td>
<td>20 %</td>
<td>Any class</td>
</tr>
<tr>
<td>EXAM 1</td>
<td>20 %</td>
<td>February 10, 04</td>
</tr>
<tr>
<td>EXAM 2</td>
<td>20 %</td>
<td>March 30, 04</td>
</tr>
<tr>
<td>FINAL EXAM</td>
<td>25 %</td>
<td>May 04, 04 (6: 30 p.m.)</td>
</tr>
<tr>
<td>HOMEWORKS</td>
<td>15%</td>
<td>announced and unannounced</td>
</tr>
</tbody>
</table>

**Students with Disabilities:**

If you have a disability and need classroom accommodations, please contact Gena Smith, Coordinator, Services for Students with Disabilities, at 323-3290, as soon as possible. Once you have your professor notification letter, please notify me so that I am aware of your accommodations well before the first {test/paper/assignment}. 

**Course Content:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Sequence of course topics</th>
<th>Readings</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td><strong>Introduction and Overview of GIS</strong></td>
<td>A course</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Definition of GIS, features and functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Why GIS Is Important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Contributing and Allied Disciplines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>GIS Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>Historical Development of GIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td><strong>Basics of ArcView?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Geographic features</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Feature attributes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>ArcView Themes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>ArcView’s graphical user interface (GUI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>The project window</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module</td>
<td>Title</td>
<td>Notes</td>
<td>Dates</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------</td>
<td>---------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>III</td>
<td>ArcView’s Project Documents</td>
<td>overheads, notes, articles</td>
<td>Feb., 10th</td>
</tr>
<tr>
<td>IV</td>
<td>Getting Data into ArcView</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Displaying Themes</td>
<td>assignments</td>
<td>March 30, 04</td>
</tr>
<tr>
<td>VI</td>
<td>Community Geography: <em>GIS In Action</em></td>
<td>Module {1,3,4,7,8}</td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>Project Planning</td>
<td>Module 8</td>
<td>May 04, 04 (6:30 p.m.)</td>
</tr>
</tbody>
</table>

© Mabaye Dia, 2004