

# Cover Sheet: Request 9599

## ucc2-SUR3393 Geographic Info Systems

### Info

|             |   |
|-------------|---|
| Process     | Course Modify Ugrad/Pro                     |
| Status      | Pending                                     |
| Submitter   | Sager, Scott A sasager@ufl.edu              |
| Created     | 9/23/2014 3:51:34 PM                        |
| Updated     | 8/28/2015 8:45:45 AM                        |
| Description | change of prefix, combining lecture and lab |

### Actions

| Step  | Status   | Group   | User               | Comment              | Updated   |
|---|----------|---|--------------------|----------------------|-----------|
| Department  | Approved | CALS - Forest Resources and Conservation<br>514946000 | White, Tim         |                      | 9/24/2014 |
| No document changes   |          |   |                    |                      |           |
| College   | Approved | CALS - College of Agricultural and Life Sciences      | Brendemuhl, Joel H | Approved by CALS CC. | 8/28/2015 |
| Replaced ucc2_GIS3XXX Geographic Info Systems.pdf                 |          |   |                    |                      | 3/3/2015  |
| Replaced syllabus_GIS3XXXC Geographic Info Systems.docx           |          |   |                    |                      | 3/3/2015  |
| Replaced ucc2_GIS3XXXC Geographic Information Systems.docx        |          |   |                    |                      | 8/28/2015 |
| Replaced syllabus_GIS3XXXC Geographic Info Systems.docx           |          |   |                    |                      | 3/3/2015  |
| Replaced syllabus_GIS3XXXC Geographic Info Systems.docx           |          |   |                    |                      | 8/28/2015 |
| Added ucc2_GIS3XXXC Geographic Information Systems-2_revised.docx |          |   |                    |                      | 8/28/2015 |
| Added syllabus_GIS3XXXC Geographic Info Systems_revised.docx      |          |   |                    |                      | 8/28/2015 |
| University Curriculum Committee                                   | Pending  | PV - University Curriculum Committee (UCC)            |                    |                      | 8/28/2015 |
| No document changes   |          |   |                    |                      |           |
| Statewide Course Numbering System                                 |          |   |                    |                      |           |
| No document changes   |          |   |                    |                      |           |
| Office of the Registrar   |          |   |                    |                      |           |
| No document changes   |          |   |                    |                      |           |
| Student Academic Support System                                   |          |   |                    |                      |           |
| No document changes   |          |   |                    |                      |           |
| Catalog   |          |   |                    |                      |           |
| No document changes   |          |   |                    |                      |           |
| College Notified  |          |   |                    |                      |           |
| No document changes   |          |   |                    |                      |           |



Updating prefix to more accurately reflect content. Combining lecture with lab (see separate request to terminate SUR3393L).

### Syllabus Requirements Checklist

The University's complete Syllabus Policy can be found at:

[http://www.a.a.ufl.edu/Data/Sites/18/media/policies/syllabi\\_policy.pdf](http://www.a.a.ufl.edu/Data/Sites/18/media/policies/syllabi_policy.pdf)

The syllabus of the proposed course **must** include the following:

- Course title
- Instructor contact information (if applicable, TA information may be listed as TBA)
- Office hours during which students may meet with the instructor and TA (if applicable)
- Course objectives and/or goals
- A weekly course schedule of topics and assignments.
- Methods by which students will be evaluated and their grades determined
- Information on current UF grading policies for assigning grade points. This may be achieved by including a link to the appropriate undergraduate catalog web page:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.
- List of all required and recommended textbooks
- Materials and Supplies Fees, if any
- A statement related to class attendance, make-up exams and other work such as: *"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>."*
- A statement related to accommodations for students with disabilities such as: *"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."*
- A statement informing students of the online course evaluation process such as: *"Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>."*

It is **recommended** that the syllabus contain the following:

- Critical dates for exams or other work
- Class demeanor expected by the professor (e.g. tardiness, cell phone usage)
- The university's honesty policy regarding cheating, plagiarism, etc.

*Suggested wording: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.*

- Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies

## GEOGRAPHIC INFORMATION SYSTEMS

### Description:

Addresses GIS concepts, data sources, spatial references: GIS data modeling, management, and editing; surface modeling; and vector and raster analysis. Provides practical examples, tutorials, and projects serving the geomatics, natural resource management, and planning fields.

**Instructor:** Dr. Amr Abd-Elrahman (Phone: 813.757.2283, Email: [aamr@ufl.edu](mailto:aamr@ufl.edu))  
**Office Location:** Plant City Education Center (Room 112)  
**Office Hours:** Wed. 3:00 –5:00 p via Adobe Connect\* & by appointment  
**Class Hours:** Polycom\*\*–Mon and Wed period 6 (12:50 -1:40 p) – Recorded for web section(s)  
**Lab Hours:** online via AdobeConnect\*–Fri period 3 and 4 (9:35-11:30a)-Recorded for web section(s)  
**Website:** <https://lss.at.ufl.edu> (Canvas system)

### Course Objectives:

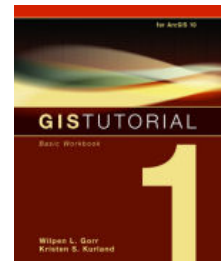
At the conclusion of this course, the student will be able to:

- Identify the concept of geographic information systems
- Compare different national and international spatial reference systems and perform spatial reference transformation
- Model spatial and non-spatial data in relational and object-relational databases.
- Apply vector data analysis and solve spatial problems using vector analysis tools
- Apply network and raster analysis
- Implement ArcGIS software in building and analyzing GIS data

### Course Resources

#### REQUIRED TEXTBOOK (LAB EXERCISES):

Gorr, Wilpen L. and Kristen S. Kurland, "GIS Tutorial 1", ESRI Press, ISBN: 978-1-58948-335-4. A new book is required as it includes a 180 day trial license for the ArcGIS 10.1 software. You can use the software to do the exercises on your PC.



#### HIGHLY RECOMMENDED TEXTBOOK

Paul Bolstad (2008). GIS Fundamentals (4th edition). Eider Press. ISBN: 978-0-9717647-3-6. Note: The third edition version of the book will work too.

#### ADDITIONAL MATERIALS:

- Reading and multimedia assignments will be issued as needed
- Links to websites covering GIS topics and data sources will be given throughout the semester.

\*Adobe Connect is a software program used to conduct virtual meetings. See “[Using Adobe Connect Software](#)” section.

\*\* Polycom is a video conferencing system used to facilitate class lectures. Lectures via Polycom will be recorded and available for ONLY two weeks after the lecture date.

### Grading:

| Grading Item | Grade Percentage | Description |
|--------------|------------------|-------------|
|--------------|------------------|-------------|

|                            |            |   |
|----------------------------|------------|---|
| <b>Lab Activities</b>      | <b>30%</b> | This includes lab participation, performing assigned tutorials from ‘GIS Tutorial’ book and submitting lab reports. Please see the <a href="#">‘Laboratory Attendance and Tutorials’</a> section for more details.                              |
| <b>Class Participation</b> | <b>5%</b>  | Class participation includes class attendance and participation in online discussions. Please see the <a href="#">‘Class Participation’</a> section for more details.   |
| <b>Midterms</b>            | <b>40%</b> | Two midterms will be delivered tentatively after the second and fourth modules. Exact midterm dates will be posted on the course website (Canvas) at least one week before the exam offering date. Please check the course calendar frequently. |
| <b>Projects</b>            | <b>25%</b> | Three projects will be distributed through the semester. Each project headline, time frame and deliverables will be posted at the course Canvas system website. Please see the <a href="#">‘projects’</a> section for more details.             |

### Grading Scheme:

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

| Letter Grade             | A      | A-    | B+    | B     | B-    | C+    | C     | C-    | D+    | D     | D-    | E    |
|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| <b>Course Percentage</b> | 95-100 | 90-94 | 85-89 | 80-84 | 75-79 | 70-74 | 65-69 | 60-64 | 55-59 | 50-54 | 45-49 | 0-44 |
| <b>Grade Points</b>      | 4      | 3.67  | 3.33  | 3     | 2.67  | 2.33  | 2     | 1.67  | 1.33  | 1     | 0.67  | 0    |

**No material and supply or equipment fees required.**

### Laboratory Attendance and Tutorials

Laboratory sessions will be conducted according to the schedule using the Adobe Connect virtual classroom software. (Please see [‘Using Adobe Connect Software’](#) section.) Students can log on to the system from any computer by clicking on the Adobe Connect link posted in the course website (Canvas).

During the lab sessions, the students will perform the step-by-step activities in the ‘GIS Tutorial 1’ book. The data needed to perform the tutorials (ArcGIS 10.1) are on the CDs that come with the text book. If you will be using the ArcGIS software installed on CALS Virtual Desktop, we already provided copy of the data on the shared drive accessed through CALS Virtual Desktop (Please See the ArcGIS Software Access Section for more details).

The ArcGIS Tutorials 1 book is divided into chapters. You are required to do 8 of these chapters along the semester. Each chapter has a specific set of objectives and is divided into tutorials. **A summary lab report on each chapter that includes a list of chapter objectives, method and snapshot of last software screen in each tutorial, and snapshots of the ‘Your Turn’ parts in the tutorials is due on Thursday of the week following the lab activities.** For example, if activities for chapter 2 in the book is scheduled for the September 5<sup>th</sup> Friday lab, the chapter lab report will be due on Thursday September 11<sup>th</sup>. PLEASE MAKE SURE THAT YOUR SCREEN CAPTURES INCLUDE THE COMPUTER DATE AND TIME AT THE LOWER RIGHT CORNER OF THE SCREEN. The screen snapshots can be taken using any of the online freeware available for this purpose or using the ctrl-alt-PrintScr (or Alt-Fun-PrintScr) to capture and ctrl-v to past the snapshot. You may choose to enrich the reports with other items such as alternative methods to achieve objectives for extra points. This report should be considered as your notes for future referencing of the tutorials.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

---

## ArcGIS Software Access

The primary method of accessing the ArcGIS Desktop software will be using the College of Agricultural and Life Sciences (CALs) Virtual Desktop Lab <https://virtual.ifas.ufl.edu/>. Please refer to the CALs\_virtual\_machine\_arcgis.ppt presentation posted in the first week page in the course website. When using the CALs virtual desktop, please copy the EsriPress folder from the L:(faculty)\SUR3393\Fall\_2014\_Data folder to your W:(students)\ folder. Alternatively, the ArcGIS Tutorials 1 book comes with a trial version of the Software. Appendix D in the book describes how to download, activate and install the software.

## Class Participation

Virtual (online) discussion topics will be created in the course website (Canvas). You are strongly encouraged to read post and interact in such discussions. The students are also encouraged to introduce new discussion items and enrich course resources with online material. A five percentage point participation grade will be issued based on the quantity and quality of your participation in the course online discussion.

## Projects

Three projects will be announced during the semester. The time frame for each project is 2-3 weeks. Two of the projects require individual work while group work is recommended for the third project. Project description, data source, time frame, and deliverables will be posted at the course e-learning website (Canvas) and discussed in the labs/lectures. Please feel free to suggest changes to the original project to accommodate certain ideas or to add your own flavor. The basic delivery for each project is a power point presentation illustrating, at least, project objectives, methodology, data and data preparation steps, analysis, results and discussion, and conclusion. Some projects may be chosen for in-class presentation and discussion.

## Using Adobe Connect Software:

GIS sessions (for the distance section) and office hour meetings (per request) will be conducted using **Adobe Connect** web conferencing software. The software is accessed by clicking a link posted by the instructor through e-Learning. The instructor will schedule the sessions and post the link to you earlier in the semester. You should click on the link each time you need to join the GIS or office hour sessions.

The following [link](#) explains how to participate in Adobe Connect meetings/sessions. Adobe Connect only requires an internet connection, a web browser, and Adobe Flash Player version 10.1 or higher. Adobe Connect supports nearly any operating system including Windows, Macintosh, Linux and Solaris, as well as the most widely used browsers including Internet Explorer, Firefox, Safari, and Chrome. A microphone is also needed to communicate with the instructors and the students attending the session.

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.

**Lectures Schedule:**

| Week Of  | Module_                                 | Lecture Topic/Readings  | Reading (GIS Fundamentals Book – based on 4 <sup>th</sup> Edition) |
|----------|---|---|--|
| Aug. 25  | 1. Introduction to GIS and Data Sources | Course outlines – GIS Introduction – GIS data formats   | Ch1 pp. 1-21; Ch 2 pp. 25-52                                       |
| *Sep 01  |   | Introduction to ArcGIS software<br>Digital Data   | Ch 7 pp. 271-303   |
| Sept. 08 |   | Data Sources:<br>Global Positioning system  | Ch 5 pp.183-200; 206-216   |
| Sept. 15 |   | Aerial and Satellite Images   | Ch 6 pp. 223 – 264   |
| Sept. 22 |   | Data Sources...continue   |  |
| Sept. 29 | 2. Spatial References                   | Horizontal datum and map projections  | Ch 3 pp. 71-95   |
| Oct. 06  |   | Datum & projections...cont/ Vertical datums <<Module 3 Discussions>>                          | Ch3 pp. 96 - 123   |
| *Oct. 13 | 3. Data Modeling and Management         | <<Module 1 Discussions>><br>Introduction to spatial data modeling and Management (conceptual) | Ch 8 pp. 307 - 325   |
| Oct. 20  |   | Data modeling and management (cont.) (Logical modeling)                                       |  |
| Oct. 27  |   | Data modeling and management (cont.) (Physical modeling)<br><<Module 2 Discussions>>          | Ch 8 pp. 326 –339 (optional)                                       |
| Nov. 03  | 4. GIS Vector Analysis                  | Introduction to vector data analysis. Buffering, proximity analysis, and geo-processing tools | Ch 9 pp. 321 - 360   |
| *Nov. 10 |   | Vector Analysis ...cont.  |  |
| Nov. 17  |   | Using ArcGIS model builder/Network analysis   | Ch 9 pp. 347 - 389   |
| *Nov. 24 | 5. Surface Modeling and Raster Analysis | <<Module 4 Discussions>> - Surface modeling   |  |
| Dec. 01  |   | Surface modeling – Geo-statistical analysis – Introduction to raster Analysis                 | Ch 12 pp. 473-496<br>Ch 10 pp.407 – 437                            |
| Dec. 08  |   | <<Module 4 and 5 Discussion>>   |  |



**Lab Schedule#:**

| <b>Date</b> | <b>Lab Topic</b>  |
|-------------|---|
| Aug. 29     | Lab Instructions and Equipment Settings using Adobe Connect software<br>Introduction to ArcGIS Software |
| Sep. 05     | GIS Tutorials v 10.1: Chapter 1<br>Introduction   |
| Sep. 12     | GIS Tutorial: Chapter 2<br>Map Design   |
| Sep. 19     | GIS Tutorials v 10.1: Chapter 3<br>GIS Output   |
| Sep. 26     | Introduction to Geodatabases<br>GIS Tutorials v 10.1: Chapter 4<br>Geodatabases                         |
| Oct 03      | Project 1 (Data Handling and Preparation)   |
| Oct. 10     | GIS Tutorials v 10.1: Chapter 5<br>Importing Spatial and Attribute Data                                 |
| Oct. 17     | <b>** NO LAB – HOMECOMING**</b>   |
| Oct. 24     | Discussions of project 1<br>Project 2 (Basic Data Analysis)   |
| Oct. 31     | GIS Tutorials v 10.1: Chapter 7<br>Digitizing   |
| Nov. 07     | GIS Tutorials v 10.1: Chapter 6<br>Spatial Data Processing  |
| Nov. 14     | Discussion of Project 2<br>Project 3 (GIS Analysis)   |
| Nov. 21     | GIS Tutorials v 10.1: Chapter 9<br>Spatial Analysis   |
| Nov. 28     | <b>**NO LAB – THANKSGIVING**</b>  |
| Dec. 05     | Discussion of Project 3 – Final Project<br>Representation   |

#Instructions and follow up for Project 2 will be administered within the lecture time.



## Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

## Academic Honesty Policy:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

## Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

## Gainesville Campus Helping Resources:

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

## Services for Students with Disabilities:

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing

---

special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)