Welcome to the exciting world of Geographic Information Systems (GIS) technology! This course will introduce students to the unique concepts and practical uses of GIS technology and ArcGIS software. Students will be taught how to retrieve and apply data in their chosen academic area of interest for selected GIS applications.

The course will build upon skills acquired in the workplace or from other academic experience. Students will be exposed to sophisticated concepts and the features that are associated with Geographic Information Systems, data integrity, presentation protocol, and the presentation of multiple layers of information. The course also implements more advanced computer technology, aerial photography, satellite imagery, topographic maps, and Global Positioning Systems (GPS) data.

Why should I be interested in GIS? GIS can create a realm of exciting employment possibilities because it opens many doors to new careers, regardless of your education and background. In addition, students can actively seek job promotions or even make career changes simply by having experience in using GIS applications. Ultimately, this course is designed to incorporate an interdisciplinary and multidisciplinary approach to computer technology. As a result, students from all academic fields and professions can greatly enhance their careers with GIS skills and knowledge.

As we explore, your objectives should be to:

- Apply the knowledge of GIS to Geography and/or your own selected field of study;
- Relate spatially-related data and scientific applications to your field of study;
- Distinguish, assemble, and evaluate new data and conduct further research to determine the accuracy of your information;
- Develop the necessary skills to accurately present spatially-related data in a final PowerPoint presentation, including a series of maps;
- Have some fun and learn along the way!!!

**Student Learning Outcomes:**

- Utilize the basic components of a GIS to produce a basic spatial analysis that creates maps with proper cartographic elements.

Your attention is called to the table of contents and the index at the back of the book because these features are extremely helpful tools.

Additional Reading Resources:

You may need to take advantage of the periodicals and journals that are located in the Social Science Computer Lab, the campus library and/or various Internet websites (e.g. – ESRI, USGS, NOAA, etc.) for additional ideas and concept development for your final project.

Attendance and Class Participation:

Regular attendance is expected and students should plan on attending each class meeting and **ARRIVING ON TIME**. Attendance is taken every day at the beginning of each class and again toward the end of each class. Students who arrive late to class or leave early from class will be counted as absent for that class meeting. Not surprisingly, poor attendance will negatively affect your final grade.

Late arrivals and/or early departures are highly discouraged because constantly coming in late and leaving early is not only rude and unprofessional, but it also disrupts the entire class and the learning process for everyone. **Students who are persistent non-attendees (i.e. - more than 4 absences in the semester) and students who constantly come late to class and/or leave early from class will be dropped**. If you have any further questions about the attendance and absence policies at Orange Coast College, please see the official guidelines that are listed in the College Catalog.

Active class participation is also expected and required in order to pass this course. Class attendance and participation is an extremely important part of the course because a substantial percentage of the exam questions are derived from class discussions. Class participation points will be distributed throughout the semester for a total of 50 points. On 10 randomly selected days of the semester, you will earn 5 points if you are in attendance at both the beginning and at the end of class. If you are adequately prepared and regularly contribute to the discussions, then we can make this a fun, lively learning community and I believe that you will find this Geography course to be a rewarding educational experience.

Course Grading:

Final grades will be based upon your total point accumulation (350 points) through the following methods.

**PLEASE KEEP TRACK OF YOUR PROGRESS DURING THE SEMESTER**

<table>
<thead>
<tr>
<th>Point Value</th>
<th>My Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>50 points</td>
</tr>
<tr>
<td>Mid-Term Exam</td>
<td>50 points</td>
</tr>
<tr>
<td>Labs (3 x 30 pts each)</td>
<td>90 points</td>
</tr>
<tr>
<td>Written Assignments (3 x 20 pts each)</td>
<td>60 points</td>
</tr>
<tr>
<td>Final PowerPoint Presentation</td>
<td>50 points</td>
</tr>
<tr>
<td>Final Map Series</td>
<td>50 points</td>
</tr>
<tr>
<td>Total Points</td>
<td>350 points</td>
</tr>
</tbody>
</table>

Grading Scale:

The grading scale for this course is based on each student’s total number of points accumulated through his/her performance on all of the preceding assignments. Final grades will be assigned on a percentage basis as follows:

\[
\begin{align*}
A &= 315 - 350 \text{ Total Points} \\
B &= 280 - 314 \text{ Total Points} \\
C &= 245 - 279 \text{ Total Points} \\
D &= 210 - 244 \text{ Total Points} \\
F &= 0 - 209 \text{ Total Points}
\end{align*}
\]

(90% - 100%) (80% - 89%) (70% - 79%) (60% - 69%) (0% - 59%)
Each student is personally responsible for maintaining his/her own grade records and keeping all graded and returned materials in a file folder. It is highly recommended that you record and enter the number of points that you earn in the preceding columns (see the “My Points Earned” section above) so that you can add them up at any given time during the semester. This should easily allow you to be fully informed about your grade status and it will also permit you to reference your grade record against mine, in case you have any questions about your final grade at the end of the course.

**Student Expectations, Course Policies, and Basic Class Etiquette**

1. Students are expected to arrive on time, attend each class meeting, and stay for the full class session. If you cannot arrive on time, then you should consider either setting all of your clocks ahead, improving your time management skills, or dropping the class.

2. Any student who disrupts the class by constantly coming in late, leaving early and/or missing class will be dropped for excessive absences (more than 4 absences in the semester). Attendance regulations are found in the College Catalog. If class disruptions become a problem, students will be referred to the Dean of Students for disciplinary action.

3. **No texting, cell phones, or other electronic devices during class.** As a common courtesy to all of your classmates and the professor, it is expected that you turn off your cell phones, iPods, laptops, and all other electronic devices when you enter the classroom. Please be sure to put all electronics away in a backpack, purse, etc. – not on your desk or lap—and set them so that they do not ring, distract, or otherwise disturb the class because you will be asked to leave. Students who are seen text messaging or checking cell phones at any time during class will be marked absent for the day.

4. Please do not surf the Internet, listen to music, text your friends, check your email or Facebook account, etc. during class. The semester is short, so it is advised that use your time wisely to effectively learn and explore the world of GIS technology.

5. Packing up early is extremely rude and disrespectful to everyone in the classroom and is not permitted until the class is finished, as determined by the instructor.

6. It is highly recommended that you bring paper, writing implements, and a removable flash/thumb drive to each class meeting.

7. All written assignments must be: typed, stapled, double-spaced, edited, spell-checked, and proofread, using 12-point Arial or Times New Roman font. Points will be deducted for assignments that do not follow these specific guidelines.

8. Late assignments will not be accepted past the scheduled due date and homework assignments are due at the beginning of class. Any time after the due date is considered late and assignments will not be accepted by email. All assignments must be personally submitted by the student in class and may not be turned in by other students. Students must be present for the entire class meeting in order to submit or receive credit for assignments.

9. Any missed information is the student’s responsibility – please check with your neighbors and fellow classmates in order to find out about the information that you missed in class. If you still need further assistance, just ask. However, please do not email/ask me if you “missed anything important” or if I can quickly explain what you missed from the previous class because you were absent.

10. There will be no make-up privileges for exams, papers, projects, or assignments of any kind.

11. The Mid-Term Exam cannot be administered early and it must be taken on the day and at the hour assigned.

12. It is highly recommended that students exchange information with each other (e.g. - email addresses and/or cell phone numbers) as soon as possible so that they may have an option available for getting notes and assignments in case of an absence.

* Any behavior that is disruptive to the instructor or other students in class will not be tolerated. 

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Academic Honesty Policy:
The college standards of academic honesty will be applied in this class. Academic dishonesty will result in a “0” on all or part of an assignment and a written referral to the Dean of Students. The complete policy may be found in the 2016 Orange Coast College Catalog, the official publication that addresses academic and student services policies. An electronic copy of the College Catalog may be found on the college website. If necessary, students may be required to electronically submit their written work for plagiarism checking.

Accommodations for Disabilities:
If you have a disability and believe that you will need accommodations, then you are encouraged to contact both your instructor and the Disabled Students Center as soon as possible. The office is located in the Special Services Building and the phone number is (714) 432-0202 Ext. 25807.

SOME OF THE TOPICS THAT WE WILL STUDY THROUGHOUT THE SEMESTER:

1. Why GIS? What are some of its applications and uses?
2. Introduction to Extensions: You will acquire an introductory operating knowledge of several of these software tools while working on your labs and final projects.
3. Project Overview: What is the scope and the intended presentation requirements for your final project?
4. Data Capture: How will you select and acquire data and base information for your final project?
5. Steps for Making the Spatial Data Usable: How will the data be modified for your specific applications?
6. Steps for Getting Attribute Data into ArcGIS: Data entry and import/export will be applied as appropriate for your particular project.
7. Coordinate Systems for a Multi-Coverage Database: How do you use information which exists in different coordinate systems?
8. Steps for Performing Geographic Analysis: Querying data, selecting appropriate data ranges, selecting the appropriate spatial relationships, and data relationships.
9. Cartographic Presentation of Data: You will learn and apply many of the basic cartographic protocols.
10. Customizing ArcGIS: You will acquire methods that you can use to customize your own applications.

Class Procedures:
• The basic class organization includes discussions and presentations; the remainder of the class will consist of labs, discussions by the entire group, and partner/group collaboration.
• Select and work in groups of 2 or 3 people and exchange phone and/or email contact information. In case one group member must miss class, he/she can get caught up (i.e. - questions, discussions, concepts, procedures, assignments, etc.) before returning to the next class meeting.
• If problems or issues come up, please ask any questions to your group members and/or the entire class because everyone needs to hear and understand all of the questions. Hopefully, the answers will come from either one of your fellow group members, from one of your other classmates, or from the instructor.

THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THE SYLLABUS/COURSE OVERVIEW AS NECESSARY.
Week 1
Lecture & Lab:
- Introduction to the class and each class member introduces themselves
- Brief discussion of the GIS project and how it should be organized (please see both the “Brief Description of the GIS Project” on page 6 of the syllabus and also the final project handout that is posted on the instructor’s class website)
- Introduction to the lab, computers, ArcGIS software, plotter, and the computer network
- Interacting with maps
- Displaying map data and navigating a map
- Using basic tools and looking at feature attributes

Week 2
Lecture & Lab:
- Interacting with data, adding data to a map, and working with map layers
- Exploring online resources, creating a web map, and sharing a map package
- Symbolizing features, using graduated symbols, and creating custom symbology
- Compile data and work on final GIS projects

Week 3
Lecture & Lab:
- Labeling features, using dynamic labels, and converting dynamic labels to annotation
- Making maps for presentation, creating a layout, and adding standard map elements
- Lab #1 = My Locations in Orange County

Week 4
Lecture & Lab:
- Students discuss the proposed GIS project = 4-5 minutes each
- Written Assignment #1 = GIS Project Proposals Due at the Beginning of Class on 2/24/2016

Week 5
Lecture & Lab:
- Working with coordinate systems and projections
- Defining a map projection
- Projecting data
- Lab #2 = Power Plant Study in Montebello

Week 6
Lecture & Lab:
- Geoprocessing vector data
- Buffering features, clipping layers, exporting data
- Written Assignment #2 = Drawing Vector Data
- Compile data and work on final GIS projects

Week 7
Lecture & Lab:
- Joining and relating data, joining data by attribute
- Compile data and work on final GIS projects

Week 8
Lab: Mid-Term Exam on March 21st and March 23rd @ 12:45 pm – 2:45 pm

Week 9
Lecture & Lab:
- Creating and editing features, deleting and modifying features
- Lab #3 = Campus Map Study of Orange Coast College
Week 10
Lecture & Lab:
- Compile data and work on final GIS projects
- **Written Assignment #3 = GIS Project Updates Due at the Beginning of Class on 4/13/2016**
- Students discuss the updated GIS project = 4-5 minutes each

Week 11
Lecture & Lab:
- Geocoding addresses, creating an address locator, matching addresses
- Georeferencing a raster image
- Geocoding and Georeferencing exercises (if time permits)
- Compile data and work on final GIS projects

Weeks 12-15
Lecture & Lab:
- Key additional lectures and labs, discuss project problems and solutions, develop all projects and final PowerPoint presentations
- Work on final GIS projects and finish all maps
- Utilize ArcGIS, Excel, PowerPoint, etc. to finalize your presentation

Week 16
Lecture & Lab:
- **Final GIS Projects and Maps due on May 23rd and 25th @ 12:45 pm – 2:45 pm**
- **Final PowerPoint Presentations due in class**

**Brief Description of the GIS Project (See the handout that is posted on the instructor’s website)**
You must work through the basic GIS concepts for this course level; however, the project should not be overwhelmingly large or exceedingly complex.

1. **Project Design**
   - Question(s) to answer, problem to be solved, or an opportunity to be explored
   - It must be something that really interests you, based upon your work, academic goals or other goals

2. **Sources of Information**
   - ESRI data, maps, government/university web sites, other students, colleagues, employers, etc.

3. **Implementation Time Line**
   - Sources for GIS data should be completed and contacted within the first few weeks of the semester
   - Discussion in class and hand in a one-page project proposal on Week #4
   - Discussion in class and hand in a one-page project update on Week #10
   - Final projects, presentations, and maps are due on Week #16

4. **Intended Outcome and Final Products**
   - 3-5 minute discussion of each of the points listed (see the class handout for further details)
   - PowerPoint presentation
   - Electronic (digital) and printed copies of maps

* **FINAL DIGITAL PRODUCTS (Saved on a flash/thumb drive)**
1) Jpeg files (.jpg) of All Final Maps
2) PowerPoint Project

* **FINAL GIS PACKET (Printed copies)**
1) Final Maps (printed C size)