

Example of a Syllabus
GIS 3006: Mapping and Geovisualization
School of Geosciences
University of South Florida
Fall 2020
Web-Based Class
Day and Time: On-line
(Aug 24th – Dec 5th)

Updated and Published on Aug 23rd, 2020 (Originally published on Aug 17th)

Instructor	Dr. Barnali Dixon	Teaching Assistant: Kyle Flanagan (Grader)
Office	PRW 118 N	PRW 118N
E-mail	bdixon@usf.edu	flanagank@usf.edu
Phone	873-4025	
Fax	873-4752	
Office Hours	Email: anytime Or By appointment: send an email to set up time	Email: anytime Or By appointment: send an email to set up time
		NOTE: For ArcGIS Software Installation related matters and the software glitches etc please contact Matt Spetka (mmspetka@usf.edu) and cc me cc me (bdixon@usf.edu). This will ensure more prompt and expedite response. Matt will be available on Wednesdays digitally: 11AM -1:00 PM – please send him an email for an appointment should you need to see him some other day

DISTANCE EDUCATION

This course will be delivered through a series of Podcast or **virtual streaming lectures**. You can view all lectures via the computer, as well as take quizzes and exams on Canvas. You will need a computer with Internet Explorer (Windows 7 or newer or Mac OS X v10.2.8 or newer) to access the lectures **via Canvas and view the lectures**. However, ESRI products (ArcGIS software) required to complete the lab exercises works with Windows Vista or 7. *ArcGIS does NOT work with Mac platform and you may have some compatibility problem(s) with Windows 8 or newer version. You need to install appropriate patches when available and applicable (as posted on the Canvas). If you have Office 13, you may not be able to bring xls files directly into ArcGIS.*

Computer Requirements:

1. Computer access to current MS office (MS word, PowerPoint, and Visio), Internet access, & E-mail capabilities
2. Access the course web page daily. (my.usf.edu)
3. The course web page offers you many instructional aids. It is your responsibility to learn how to use the **Canvas site**. The student must become familiar with this site and the materials available. All assignments will be made available via Canvas. You are required

- to take exams and quizzes via Canvas as well as submit all assignments (term project and lab projects) using Canvas (digital drop box).
- INTERNET : To reach your section's Homepage you must enter through the new USF Web Portal <https://my.usf.edu> . Many of you already have your official USF NetID (a modification of your name) and Password. If not, you need to register. Select “ Sign up ”, “ Activate your NetID ” and follow the instructions. You will need to know your USF ID Card Number: “640013...” (ten digits). You should find yourself in “Canvas” click on “Courses” and “GIS For Non-Majors”. After a little surfing you will find “Course Material”, “Assignments”, “Communication” ”Discussion Board ” or “ Roster (search)”, which lists all members of the class and their email addresses and Tools” ” Check Grade ” or “ Calendar ”.
 - Signed Syllabus Acknowledgement form (available via Canvas) – **Due no later than Aug 28th, 2020**. Download the form, fill it out and then scan and upload. It requires your ‘actual’ signature. **We need the signed syllabus acknowledgement form to provide you the EVA code.**
 - You will be needing ArcGIS software developed by ESRI to complete the lab exercises. A complementary (student version – 6 month trial) of ArcGIS software (**EVA code**) will be provided to you upon receiving your ‘signed syllabus acknowledge form’ uploaded via Canvas. **You need to follow instructions to download the software 10.3.1 from ESRI website using the EVA code we will provide. Each student will get a unique EVA code. Please review computer specifications located along with the software download instructions.** We recommend that you have windows vista or newer as ArcGIS works smoothly with these OS. Further, we recommend that you have MS office 2007 or newer. *Instructions will be posted on the Canvas to address these compatibilities. It is your responsibility to read the instructions carefully.*
 - If you are using Library Computers here at USFSP – please see under FAQ for additional instructions. Permission levels in your personal computer will be different than the library computers.

Course Description

This course is a part of the University of South Florida's General Education Curriculum. It is certified for **Information and Data Literacy**. Students enrolled in this course will be asked to participate in the USF General Education assessment effort. This will involve submitting copies of writing assignments for review via Canvas. As a second tier General Education course, GIS 3006 builds upon students’ general knowledge of the arts and sciences through its focus on intellectual and practical skills. Intellectual skills include problem solving and process writing. Practical skills include spatial data creation, map making, and map interpretation. Completion of this course will prepare Geography majors and Geographic Information Systems & Technology minors for upper level GIS courses, internships, and high intensity practice (HIP) courses. Other majors will be able to apply what they have learned about spatial data and cartography to their own disciplines.

Course goals and objectives include:

- Students will develop a basic understanding of cartography and GIS

- Students will know how to collect and organize spatial data
- Students will understand the fundamental concepts of scale and map projections
- Students will identify different kinds of maps and their purposes
- Students will understand how to create different kinds of maps
- Students will understand how to critically interpret maps and spatial data

Student learning outcomes include:

- Students will describe history of cartography and GIS
- Students will find, edit, and store spatial data in a geodatabase using GIS software
- Students will select an appropriate map projection and scale for a map and re-project and map the associated spatial data using GIS software
- Students will create general reference, topographic, and thematic maps using GIS software.
- Students will critically interpret quantitative evidence (such as graphs, tables, charts) in order to identify false claims, incorrect use of evidence, or contradictory statements
- Students will contribute to scholarly conversations using discipline-appropriate communication in different modalities, such as local online communities, guided discussions, undergraduate research journals, and conference presentations/poster sessions.

Summary of Overall Goals:

This course is an introduction to the concepts and techniques of thematic mapping and the capture, storage, and visualization of digital geographic data. Students are expected to develop skills necessary for designing and evaluating cartographic representations of information. The course has five specific goals:

1. to provide an understanding of techniques by which geographic features are referenced on the earth and the methods by which they can be represented digitally for mapping and analysis purposes;
2. to provide a background to the fundamental principles of cartography, map design, and production;
3. to expose students to a variety of thematic mapping techniques;
4. to familiarize students with a widely-used mapping/GIS software application (*ArcGIS*); and
5. to ensure that students are prepared adequately for advanced courses on geographic information systems (GIS), cartographic modeling, and spatial analysis.

Course Readings

Required Text:

1. The textbook for this course is: Dent, B. D. 2009. *Cartography: Thematic Map Design* (6th edition). Boston: WCB/McGraw Hill. This title is available the USF bookstore. **978 -0 – 07-294-382-5**

Suggested Text:

2. ESRI, Inc. ArcGIS 10.3. *Getting to Know ArcGIS Desktop*. Redlands, California: ESRI. ISBN-13: 13: 978-1589483828¹

Other Suggested Readings:

- (i) Campbell, J. 1998. *Map Use and Analysis*. Boston: McGraw Hill.
- (ii) Monmonier, M. 1996. *How to Lie with Maps*. Chicago: University of Chicago Press.
- (iii) Robinson, A., et al. 1995. *Elements of Cartography*. New York: John Wiley & Sons.
- (iv) Some additional handouts and scientific articles will be provided whenever I feel that additional handouts will aid understanding of the subject.

Please feel free to consult ArcGIS manuals and on-line help.

Course Components

- 1. Introduction to fundamental concepts of digital mapping
- 2. Introduction to GIS software ArcGIS
- 3. Working on class projects (lab exercises)
- 4. Term Projects with Portfolio and Report
- 5. On-line quiz ungraded
- 6. Journal writing

Class Grading

Mid Term 1	15%
Mid Term 2	15%
Final	15%
1 Major Term Project with Map Portfolio + Report	20%
Lab Assignments	30%
Journal Writing	5%
Total	100%

Grading Scale

>= 96%	A+
90 - 95%	A
85 – 89%	B+
80 – 84%	B
75 – 79%	C+
70 – 74%	C
65 – 69%	D+
60 – 64%	D
<60%	F

NOTE – your weighted grade according to this syllabus is your final grade. Canvas keeps/shows grades that may not be weighted.

¹ This ESRI book is not a required book, you can borrow it from library. You may find this book helpful for your term project.

Incompletes

Incomplete grades (I) are awarded only if the criteria in the USFSP catalog are met. USFSP policy can be found in the Catalog for the current academic year. “ An “I” grade indicates incomplete coursework and may be awarded to an undergraduate student only when a small portion of the student's work is incomplete and only when the student is otherwise earning a passing grade.”

Exams

There will be two midterms. Exams are composed of theory (based on the lecture notes) and some basic GIS software questions. Be sure to watch the videos. **See the tables 1 and 2 below for details**

Make Up Exams

No Make up exams will be permitted.

Thematic Mapping Term Project and Map Portfolio

One major thematic mapping term projects will be assigned during this term. Guidelines and due dates will be announced at the time they are assigned via Canvas. **These dates and times will be adhered to rigidly!! No late submission. You must submit your data and mxd as one zip file for the part III of the term project.** The project is due on **11/29/20 - Sunday 5:00 PM (NO exceptions).** You have to be able to synthesize, integrate and apply pertinent lab exercises, readings and lectures to be able to successfully complete the Term Project. **Term Project is not another exercise and hence we will provide limited instructions and you are required to fill in the gaps and connect dots to produce results for the tasks assigned for the term project. Your will submit your map portfolio along with the report. Approved/authorized materials you can consults to complete your team project are: reading assignment, lab exercises and received lectures provide by me via Canvas. Use of any other items/materials will be considered unauthorized materials under applicable policy for academic dishonesty.**

Details of Final Map Portfolio and Report for Term Project

As a final project in the course, students will complete a map portfolio with report. The map portfolio requires submission of two original maps, one general reference map and one thematic map, along with detailed, written descriptions of the produced maps (see term project Part III). The accompanying descriptions must include: justification for the selection of the theme or concept to be mapped, a description and interpretation of the map; data sources, projections, and mapping methods; and a critical analysis of the map from a cartographic perspective. The critical analysis should highlight all of the possible effects of generalization on the maps and map errors as discussed in class as well as map ethics (**see chapter 1 of the text book by Dent et al**) and how students have purposefully tried to manage those impacts.

Lab Assignments

Several lab assignments will be due through out the semester. Please consult the course outline for details. **Unless otherwise specified the lab assignments are due the following Sunday after they are assigned. For example: an assignment assigned for week 2 is due on Sunday (by 5:00 pm). No late submission.** You first assignment is due on **9/06/20**.

Journal Writing

You are required to keep a journal for each week. You are also required to **turn** in your journal electronically to your Canvas account each week (**starting from week2**). You must submit them by **Sunday 5:00 pm each week. YOUR first journal is due on Sunday (9/06/20).** No late submission. Journal writing is a great way to assess and evaluate your own learning process. I will grade your journal by 'check' and 'no check' method. I will not grade the content or writing style of your journal. 5% of the total grade comes from this journal writing.

- ✓ *Check = Turned in = 100% of the points assigned per week*
- No check = Not Turned in = 0% of the points assigned per week*

Topics you need to address in your journals are:

- i. What you liked the most after reading the assigned chapter from your text books (Dent, 2009; Clarke 2002 and Berry 1996)?
- ii. What you did not understand after reading the assigned chapter from the text book (Dent, 2009; Clarke 2002 and Berry 1996)?
- iii. What did you like about the lecture or project?
- iv. What you did not like about the lecture or project?
- v. List the concepts you grasped easily.
- vi. List the concepts that were difficult to grasp.
- vii. Are you finding the topics interesting? Yes – please explain.

Minimum Recommended study requirements

1. This course is a CUMULATIVE learning experience, therefore, it is important that you:
2. Dedicate a minimum of **four – six (will need as the semester progresses) plus hours** of study to this course (lecture and exercises) per week.
3. Preview material to be covered by recorded lectures by reading ahead in the book and looking at the lecture slides on Canvas website. (see below for Keys to Success in the Course)
4. Come to class (ie review recorded lectures) and take a good set of notes on what is covered in class.
5. Be prepared to be an active learner and ask questions via email.
6. Immediately after class, review lecture notes, assigned reading, and work suggested chapter questions and problems. Stay on top of material; do not fall behind in your studying.
7. It is essential that you work suggested chapter questions and problems (including lab exercises). You may want to keep a problem notebook (concepts that you had difficulty with). Attempt every problem/labs – integrate information between lecture, readings and labs; mastery of subject requires much practice.

8. Please seek help as soon as possible if you are having difficulty because this course will be taught at a rapid pace and many principles rely on mastery of previous material.

Academic Dishonesty

It is expected that students work independently on exams and assignments. According to the USF Academic Dishonesty Policy: "Punishments for academic dishonesty will depend on the seriousness of the offense and may include receipt of an "F" or "Zero" on the subject paper, lab report, etc., an "F" in the course, suspension or expulsion from the University. The University drop and forgiveness policies shall be revoked for a student accused of academic dishonesty. The internal transcript of a student who is awarded an "F" for academic dishonesty will read "FF." Notice that a student has been dismissed for reasons of academic dishonesty may be reflected on the student's transcript." For more information on the USFSP Academic Dishonesty Policy, refer to the Undergraduate/Graduate Catalog for the current academic year. All lab exercises, term projects, quiz as well as midterms are to be completed without any help from other students or unauthorized materials. For example for midterms and quizzes they are closed book and notes as well as any other online help. For Term project you can't copy paste software related answers from ESRI website. If I suspect unauthorized collaboration, I will give 0 to everyone involved in collaboration in the assignment (and unauthorized use of materials) and may also give F in the course or FF.

Students with Disabilities

If you are a student who has special needs because of any disability, please see the staff in the office or the Dean of Students, to self disclose and provide supporting documentation. Please feel free to discuss the issue with me in private.

Keys to Success in the Course

Key #1: You must understand how you best learn (listening, looking, hearing, talking) and adapt your study approach to your learning style. This class is designed to provide plenty of learning opportunity to different learning styles.

Key #2: You must read the assigned **readings before** watching lectures. Please use the study guide at the end of each chapter. Know the terms **before** you attend class/watch lectures. Jargon will not go away. Unfortunately, it is a part of every field. The terms in **Digital Thematic Mapping and GIS** are not hard to understand. They are just strange and unfamiliar **at first**. A big hurdle for many students is that they are overwhelmed by jargon the first time they encounter the term. They shut down when they hear an unfamiliar word. If this "shut down" occurs in class, you'll miss the point. Look at the diagrams and visualize what the terms mean. Look up unfamiliar words and learn them.

Key #3 : You must review the material soon after you learn it for the first time! Most students need to learn the material at least 4 times. The first time is to learn the jargon before class. The second time is to re-learn the jargon and learn the concept in class. The third time is to re-re-learn what was stressed in class by reviewing ideas **WITHIN 1-3 DAYS AFTER THE CLASS**. If you do not reinforce your learning within 1-3 days, you will lose most of it. The fourth time is during test preparation.

Key #4: Assemble your class notes, texts, handouts, and so on. List all the topics you believe the teacher might use for test questions. It is crucial that your list is complete so take the time needed.

Believe it or not, the best way to prepare for any test is to guess the test questions. Odds are, you will encounter hints during lectures.

Key #5: The bottom line is that you must take an active role in learning if you wish to succeed.

Key# 6: You will be given opportunity to work in many small and large class projects. Engage in your course actively and you will find **learning is fun.**

IMPORTANT NOTES

You MUST be able to ‘Read the instructions correctly and follow them’. Make sure to **pay attention to details**. If you don't install the software correctly (following our instructions posted on the canvas) you will have problems as the semester progresses. Please read the software installation related instructions (posted on the canvas) carefully and install the software correctly. Further you have to install the appropriate service pack and 'meta data exclusion' patch (as posted on the canvas). Without proper environmental settings (that is software installed correctly along with all service packs and patches) - **you will NOT be able to complete the assignments (Exercise 9 onwards) and TERM project correctly and efficiently. This will lead to unnecessary frustration consequently your performance in this class may be impacted which will affect your grade.**

Solution is simple. Follow the steps below:

1. Install and Register the software using the EVA code I will provide- follow the instructions under FAQ
2. Download and install appropriate service pack (see under web resources)
3. Download and install 'meta data exclusion patch' (see under web resources ONLY if recommended). If your particular OS needs it - usually will be prompted by the software. Otherwise don't worry about this step.

Additionally, Make sure that you can see all the videos (located under links called ‘on-LINE video lectures’ and ‘Additional Lectures’ by week2 (from the start of the class). Each lecture is stored under their respective modules. If not - you need to inform us on or before the end of week 2.

Dispute with Grades and complaints: If you have any question and concerns about your grade, please contact the instructor as soon as possible. If you are unsatisfied with the resolution, you are required to follow the grievance policies and procedures about your grade/concerns as outlined in your student handbook and catalog. Please remember: the syllabus is a contract.

Title IX: Gender-Based Crimes - Educators must report incidents of gender-based crimes including sexual assault, sexual harassment, stalking, dating violence and domestic violence. If a student discloses in class, in papers, or to an instructor, the instructor is required by law to report the disclosure. The Wellness Center ([727-873-4422](tel:727-873-4422)) and the USFSP Victim Advocate ([727-698-2079](tel:727-698-2079)) are confidential resources where you can talk about such situations and receive assistance in confidence.

See Two Tables Below for more Details about Weekly Assignments, Readings, Exercises and Quiz/Exams

For Academic Calendar Click the Link Below: <https://www.usfsp.edu/academic-calendar/>

NOTES: Complete and submit the exercises via Canvas. You can work ahead but you can't miss the deadlines. I reserve the right to modify the schedule if necessary. In that unlikely case, latest postings on the website will take precedence over this schedule. If you fail to logon to the Canvas and submit your completed syllabus acknowledgement form between 8/24/20 and 8/28/20 (5:00 pm on 8/28 you will be dropped from the course).

Class	Lecture Topics ²	Readings ³	Projects/ Exercise (Lab) ⁴
1.	What is a map	Chapter 1	
2.	Introduction to Cartographic Processes and Introduction to ArcGIS		<u>Exercise 1a and 1b</u> : Introduction to GIS Software (ArcGIS)
3.	Map Scale and Earth-Map relation	Chapter 2 and 3	<u>Exercise 2</u> : Map Projections and Coordinate System I: Effects of Map Projection
4.	Map Projections	Chapters 2 and 3	<u>Exercise 3</u> : Map Projections and Coordinate Systems II : Examine Spheroids
5.	Coordinate Systems Quiz 1	Chapters 2 and 3	<u>Exercise 4</u> : Map Projections and Coordinate System I: Effects of Map Projection
6.	Census Geography Midterm I		<u>Class Project</u> : Census Geography: American Fact Finder
7.	How we collect data? Quiz 2		<u>Class Project</u> : GPS Exercise
8.	Map design and composition Term Project: Assign	Chapter 13, 15, 4 and 5	<u>Exercise 5</u> : Map Design and Layout I : Designing maps with a purpose
9.	Map lettering and Typography	Chapter 4 and 5	<u>Exercise 6</u> : Map Design and Layout II: Work with Visual Hierarchy <u>Exercise 7</u> : Map Design and Layout III : Design elements & map projections
10.	Cartographic Process Quiz 3	Chapter 13 and 14	<u>Work on your term project</u>
11.	Introduction to GIS #Case Study 1 – Social Impact Analysis #Case Study 2 – Strategic Planning and Application of GIS	Chapter 6	<u>Exercise 8</u> : GIS Analysis: Query and analyze data
12.	GIS data model and analysis What is ‘Dot mapping’? Introduction to Choropleth mapping?	Chapter 4, 6 & 7	<u>Exercise 9</u> : Mapping: Dot Density <u>Exercise 10</u> : Mapping: Choropleth
13.	What is Proportional Symbol in Maps? Midterm II	Chapter 8	<u>Exercise 11</u> : Mapping: Proportional Symbol <u>Work on your term project</u>
14.	Term Project : DUE	Chapter 7, 8, 11, 9 & 10	<u>Submit Term Project Map Portfolio & Report Twice</u>
15.	<u>DL Final exam</u>		Final is Due on or before Dec 5th , 2020, 12:00 noon

Table 2: Class Dates with Reference to Week and Tasks/ Assignments (Most assignments are due on Sunday 5:00 PM but exceptions are noted in **Red Text)**

Prior to the 1 st Class and During Week #1	Review Syllabus and Familiarize Yourself with Canvas	Signed Syllabus Must be uploaded via canvas by 8/28/2020	Upload Signed Syllabus Form By 8/28/20
First Day of Class (8/24/2020) Week # 1	First Day of Attendance	Anytime between 8/24-8/28	All you need to do for the first day of attendance is log-in to Canvas between 8/24-8/28
Week	Lab Exercises and Journal : Assign Dates	Lab Exercise and Journals: Due Date	Quizzes /Exams/ Term Projects Due
1	08/24/20 NONE	08/30/20 NONE	Signed Syllabus Acknowledgment form by 8/28/20
2	08/31/20	09/06/20 – Ex 1a & 1b	
3	09/07/20	09/13/20 – Ex 2	
4	09/14/20	09/20/20 – Ex 3	
5	09/21/20	09/27/20 – Ex 4	Quiz 1*
6	09/28/20	10/04/20 – CP**	Midterm I*
7	10/05/20	10/11/20 – CP**	Quiz 2*
8	10/12/20	10/18/20 – Ex 5	
9	10/19/20	10/25/20 – Ex 6 & 7	
10	10/26/20	11/01/20	Quiz 3*
11	11/02/20	11/08/20 – Ex 8	
12	11/09/20	11/15/20 – Ex 9 & 10	
13	11/16/20	11/22/20 – Ex 11	Midterm II*
14	11/23/20	11/29/20	Term Project
15	11/30/20	12/05/20*	FINAL* Exam due 12:00 noon 12/05/20

Note: * In general they are open for a ~week and you can take the exam/quiz anytime during the assigned week. Check actual exam/quiz for exact date and time. **FINAL Exam will be closed on 12/5/20 at 12:00 Noon.** ** CP nothing to submit.

Other Important Dates

² Lecture are located under ‘online video lectures’ link – unless specified otherwise. #Case Studies are located under ‘Additional Lectures’

³ * All readings in Dent 2009, unless otherwise noted.

⁴ Complete and submit the exercises via canvas