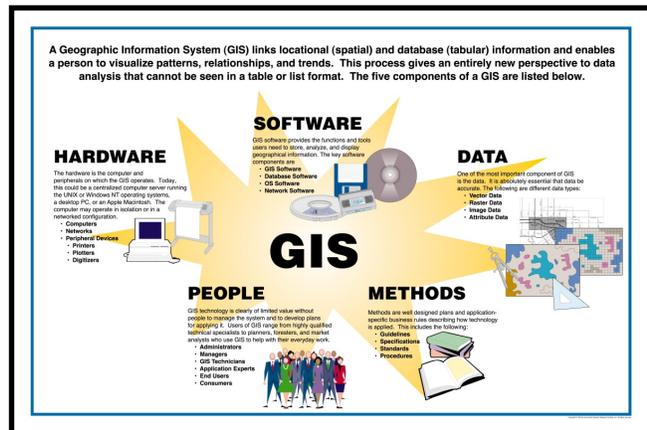


Introduction to Geographic Information Systems (GIS)

GARP 0244-001 – Online – CRN# 10749

This course provides you with the fundamentals of GIS and digital mapping. You will be introduced to basic GIS skills and the structure of geospatial databases necessary to create a GIS, using the ArcGIS 9.3 suite of software applications. The goal of this course is to understand GIS as a useful and flexible tool that you can use to address and solve a wide range of everyday 'geographic' questions and problems. We will also learn how to export your GIS maps into Google Earth and explore some of the new Web Mapping Applications.



Please note: This is an online course within the PLATO online learning environment. Online learning is different from the traditional face-to-face learning that you may be used to. Please consider the following 'big-picture' aspects of online learning:

1. You have to be highly self-motivated and self-disciplined to learn online. If you have difficulties motivating yourself, then online learning may not be the best choice for you.
2. You have to be able to deal with technical challenges. I don't expect you to know everything, but to use the available resources to solve problems on your own.
3. You can learn on your own schedule, but please realize there are firm deadlines for the weekly assignments and projects. Good time management and organization skills are crucial for success.
4. You have to be proactive in your learning – I cannot 'see' you struggling with the content or the assignments – you need to ask the questions.
5. You need to collaborate with your fellow students in class, using the online discussion forums, chat rooms, Who Online?, etc.

1) Prerequisites

None, but robust computer and statistical skills are absolutely necessary to be successful in this course (e.g. knowledge of Microsoft Excel) – please consult with me if you have any concerns. I will not be teaching basic computer skills!

- See Section 5 (Computer Access and Knowledge) for more detailed information about the required computer access and knowledge.
- For some, taking a course such as MGMT 0107 *Software Applications* before taking GARP 0244 is a good strategy. Note: MGMT 0107 *Software Applications* is also a requirement for the GIS Minor.
- Note: this course a prerequisite for GARP0344 (Advanced Geographic Information Systems, Spring 2010 semester).

2) Your Instructor

Dr. Carsten Braun

cbraun@wsc.ma.edu

<http://www.wsc.ma.edu/garp/faculty/cb.html>

413.572.5595, Bates 217

Office Hours (in person): MWF 12:00 to 13:00

Office Hours (online) : W 20:00 to 22:00

➔ If you feel that you are not progressing as well as you hoped, please feel free to talk to me during my office hours or a mutually convenient time – the sooner the better! Please do not wait until the end of the semester. I'm happy to support you to help you succeed.

3) Learning Goals

- 1) Knowledge
Geospatial concepts and analysis using GIS tools (ArcGIS 9.3) and GIS data sources.
- 2) Skills and Critical Thinking
Application of geospatial concepts, analysis, and GIS tools.
Intellectual inquiry and effective communication.
- 3) Perspective
Space, spatial patterns, and spatial relationships as global organizing concepts.

4) Required Course Resources

Textbook

GIS Tutorial: Workbook for ArcView 9 (3rd Edition)

W.L. Gorr and K.S. Kurland

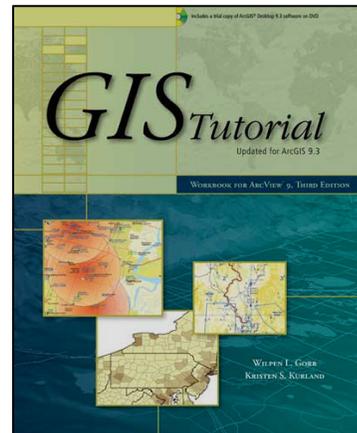
ISBN 978-1589482050, 434 pp

ESRI Press August 2008

Available at the WSC bookstore or from online vendors

This excellent tutorial/textbook includes a series of chapters, exercises, and assignments to provoke critical thinking and develop quantitative problem-solving skills using a GIS.

Please note: This is the 3rd edition of this textbook, updated for ArcGIS 9.3.



Do NOT buy a previous edition or used copy of this book – the software and the exercises will NOT work with the current version of the software.

The GIS Tutorial includes one CD and one DVD. The CD contains the exercise data, the DVD contains a free 180-day fully-functional version of ArcGIS 9.3. The data and software are provided for you in the computer labs on campus (Wilson and Bates), but you should install them on your personal computer at home.

A dedicated USB flash drive for this course

A dedicated USB flash drive is required for this class (in order to save your data, exercises, assignments, and GIS projects). Required size: 2GB or greater; approximate cost: \$15 and up.

Access to a reliable and modern PC

This resource should be obvious: GIS is a software application and we will be using PLATO as our online learning environment. All PCs in the WSC campus computer labs in Wilson and Bates Hall have the required software installed. See Section 5 (Computer Access and Knowledge) for more detailed information about the required computer access and knowledge.

5) Computer Access and Knowledge

Before the semester starts, please make sure that you and your computer are ready for online learning. Visit the following Web site to learning “how to login” to PLATO:

http://www.wsc.ma.edu/plato/Seven_Steps_To_Logging_Into_Vista.html

- All PCs in the campus computer labs in Wilson and Bates Hall have all the required software installed.
- It is your responsibility to setup your personal computer (but help and support are available from the campus IT folks).

Computer Literacy Requirements – Please ask yourself the following questions:

- Do I have a working Westfield State College computer account?
- Do I know how to log onto the Westfield State College network?
- Do I have a reliable and modern computer?
This computer must be a PC running Microsoft Windows XP, 2000, or Vista. The ArcGIS software will NOT run on a Mac.
- Do I know the basics about my computer and its operating system?
For example: Use of USB flash drives, creating/copying files/folders, etc. I will not be teaching basic computer skills.
- Do I have reliable high-speed internet access for online learning?
If you cannot get access to high-speed internet you should use the campus computer labs to do your work.
- Do I know how to send and receive email attachments?
This question applies to regular email, the PLATO Mail Tool, the PLATO Chat Rooms, and the PLATO discussion forums.
- Do I know the basics of Microsoft Excel and Microsoft Word?
You must have access to these two programs.
- Do I know how to download files and plug-ins for my web browser?
And install them from the web if needed – for example a flash player plug-in to view *.swf files?
- Do I use Mozilla Firefox as my web browser? <http://www.mozilla.com/en-US/>
You have to use Firefox as your web browser for this course and understand what you use for firewalls, pop-up blockers, and spam software. You must know how to disable some of the above software if it interferes with the PLATO online learning environment.

➔ Please realize that technical issues will come up. You should be able to carry on an educated conversation about your computer and your software with the people at the IT and CIT HELP desk if you do encounter problems.

If you have answered No to any of the above questions...

You should consider taking a course such as MGMT 0107 *Software Applications* before taking GARP 0244. Note: MGMT 0107 *Software Applications* is also a requirement for the GIS Minor.

6) Course Logistics – The Big Picture

Geospatial software and databases (i.e. GIS) are fairly complex – ‘learning-by-doing’ is therefore the most appropriate and efficient teaching/learning method. We will create and foster a cooperative learning environment by supporting each other in order to understand concepts and to solve problems.

One of the best techniques to learn yourself is by teaching others! I encourage you to collaborate with other students on the assignments and the GIS projects. However, you are always responsible to submit your own original work by the assigned due dates.

I expect a high level of individual effort and engagement when it comes to the discussion forums, assignments/exercises, and GIS projects. What you get out of this class is primarily a function of the amount of effort you put in. This is not a class where you can sit back and wait for ‘learning to happen’. In this course, you have to consistently and actively engage with the tasks, questions, assignments/exercises, and GIS projects in order to (a) learn to use the GIS software and (b) to understand what a GIS can do for you.

➔ If you feel that you are not progressing as well as you hoped, please feel free to talk to me.

7) Course Logistics – Details

Each semester week is broadly arranged around a corresponding chapter in the GIS Tutorial (see course schedule below). Each chapter of the GIS Tutorial takes you through a series of tasks and steps to familiarize yourself with the topic/theme of the chapter. Once you’re finished with that particular section, you can start with the weekly assignment or work on the GIS projects. It remains your responsibility to complete the weekly assignments and projects by the assigned due dates. About half of the weekly assignments are taken from the GIS Tutorial, the other half are specially designed to practice important GIS skills.

In addition, there is a graded discussion forum each week where we will discuss some important aspects of GIS and geospatial analysis.

GIS Projects

These three projects are designed to practice important aspects of GIS and geospatial analysis.

- 1) *‘Lying with Maps’*
You have two weeks to complete this project, 10 percent of final grade
- 2) *MassGIS Project (land use change analysis)*
You have three weeks to complete this project, 30 percent of final grade
- 3) *Zoning in Westfield and Holyoke*
You have one week to complete this project, 10 percent of final grade

Assessment

Your final course grade is a function of your performance throughout the entire semester and combines the grades from the weekly assignments and the four GIS Projects.

- 9 weekly assignments (including discussion forums) 50 percent of final grade
- GIS Projects 50 percent of final grade

Please note: The assigned due dates are mandatory.
5 points deduction for each late day. No exceptions.

→ Adjustments to the course logistics and assessment may be necessary to account for situations that arise over the course of the semester.

A Few Rules

- 1) You have to check the course Web Site at least every two days as I add/update content almost daily.
- 2) Please allow for a 48 hour response time for contacts.
- 3) Please only contact me through the Plato Mail Tool.

Grade Conversion	
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	60-66
F	0-59

“Geography is to Space what History is to Time.”

(J.E. Dobson, 2007, ArcNews, 29(1), 1-5)

A geographic information system (GIS) is an organized collection of computer hardware, software, geographic data, and people designed to efficiently collect, store, update, manipulate, analyze, and display all forms of geographically referenced information. Technically, GIS combines a mapping software and geospatial data to create GIS tools for geospatial analysis. The data and tools are most commonly visualized as ‘intelligent maps’.

8) GARP 0244-Online Fall 2009 Semester Schedule

Week	Date	Topics, Themes, and Tasks		Assignment
Week 1	9/2 – 9/8	Welcome to GARP 0244-Online	Getting Started with Online Learning and GIS	HW #1
Week 2	9/9 – 9/15	What is GIS? Part I	Hardware, software, concepts, data, analysis, and people = GIS	HW #2
Week 3	9/16 – 9/22	What is GIS? Part II	Simple GIS: Web Mapping Applications	HW #3
Week 4	9/23 – 9/29	GIS Tutorial Ch. 1	Introduction to ArcGIS 9.3.1: ArcMap and ArcCatalog	HW #4
Week 5	9/30 – 10/6	GIS Tutorial Ch. 2	GIS Map Design: Classification and Choropleth Maps	HW #5
Week 6	10/7 – 10/13	GIS Tutorial Ch. 3	GIS Outputs = Maps: Creating Meaningful Maps	HW #6
Week 7	10/14 – 10/20	Project 1	'Lying with Maps'	Project 1
Week 8	10/21 – 10/27	Review and Reflection	Basic GIS: Intelligent and Meaningful Maps	
Week 9	10/28 – 11/03	What is MassGIS?	Online Sources of GIS Data: MassGIS and More	HW #7
Week 10	11/04 – 11/10	GIS Tutorial Ch. 6	Spatial Analysis Part I: Creating GIS Data	HW #8
Week 11	11/11 – 11/17	GIS Tutorial Ch. 8	Spatial Analysis Part II: The ArcGIS Toolbox	HW #9
Week 12	11/18 – 11/24	Project 2	MassGIS Project	Project 2
Week 13	11/25 – 12/01	Project 2	MassGIS Project	Project 2
Week 14	12/02 – 12/08	Project 2	Mass GIS Project	Project 2
Week 15	12/09 – 12/15	Project 3	Zoning for Westfield and Holyoke	Project 3

Notes

- Weeks are defined from Wednesday to the following Tuesday (= 7 days).
- The weekly assignments are due Tuesday at 23:59 unless otherwise specified.
- The due dates for the four GIS Projects will be clearly specified in the project instructions.
- Adjustments to this schedule may be necessary to account for situations that arise over the course of the semester.

FALL 2009	
September 1	Opening Day College Meeting
September 2	Classes Begin
September 7	Labor Day – No Classes
October 9	Last Day to Withdraw for Session A
October 12	Columbus Day – No Classes
October 14	Follow Monday Schedule
October 23	Session A Classes End
October 26	Session B Classes Begin
November 11	Veterans' Day - No Classes
November 17	Last Day to Withdraw for Full Semester Classes
November 24	Last Day to Withdraw for Session B
November 25	Thanksgiving Recess (begins at 12:20 p.m.)
November 30	Classes Resume
December 11	Classes End – Day Division
December 14, 15, 16, 17	Examination period
December 18	Snow Make-Up Day
December 28	All Grades Due by 9:00 a.m.

9) Help and Support



For General Computer and IT Questions

IT Help Desk (Wilson 103, Mo – Fr, 08:00 to 17:00)

On campus 4357 (HELP)
Off campus 413.572.5300, select extension 4357
Email helpdesk@wsc.ma.edu

ResNet Help Desk (Wilson Café Area, Mo – Fr, 08:00 to 17:00)

On campus 5528

CIT (Center for Instructional Technology, Wilson 114, Mo – Fr, 08:30 to 16:30)

On campus 8130
Off campus 413.572.8130

For Questions and Problems regarding PLATO

CIT (Center for Instructional Technology, Wilson 114, Mo – Fr, 08:30 to 16:30)

<http://www.wsc.ma.edu/plato/>
On campus 8130
Off campus 413.572.8130

24/7 Plato Live Support

<http://platohelp.wsc.ma.edu/>
1.866.281.5815 (toll-free)

For ArcGIS Questions

IT Help Desk (Wilson 103, Mo – Fr, 08:00 to 17:00)

On campus 4357 (HELP)
Off campus 413.572.5300, select extension 4357
Email helpdesk@wsc.ma.edu

24/7 ESRI Support Center

<http://support.esri.com/>
1.888.377.4575 (toll-free)

If all else fails...

Dr. Carsten Braun

413.572.5595
Via the PLATO Mail Tool or cbraun@wsc.ma.edu