

Central New Mexico Community College  
Applied Technologies Department  
Course Syllabus

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<b>Course Name:</b>	<b>Intro to Open Source GIS and Web Mapping</b>		
<b>Course Number:</b>	<b>GIS 2096</b>		
<b>Class Lecture Hours:</b>	2	<b>Instructor:</b>	Kurt Menke
<b>Laboratory Hours:</b>	1	<b>Cell:</b>	362-1776
<b>Credit Hours:</b>	3	<b>Lab Phone:</b>	224-3362 (GIT Lab)
<b>CRN:</b>	92564	<b>E-Mail:</b>	kurt@birdseyeviewgis.com
<b>Revised (date):</b>	May 2011	<b>Office Hours:</b>	as requested after class
<b>Revised by:</b>	Kurt Menke	<b>Class Meeting Times/Place:</b>	T Th 2:00 pm – 4:50 pm

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**Catalog Course Description:**

Introduces Open Source software for both desktop and internet GIS applications. Introduces the concepts of Open Source software, and the leading desktop and web mapping Open Source software packages.

**Entry-Level Standards:**

RDG 100, Math 100B, Working knowledge of MS Windows XP, 25 wpm keyboard skills.

**Pre-requisites:**

None

**Co-requisites:**

None

**Textbooks and other Supplies:**

**Textbook(s):**

Both texts will be provided as part of the course in digital form. Desktop GIS is out of print but can still be found if you're interested in having a hardcopy. Open Source Approaches is still in print but expensive.

Sherman, Gary E.I

2008 Desktop GIS: Mapping the Planet with Open Source Tools. Pragmatic Bookshelf,  
<http://www.pragprog.com> ISBN-10: 1-934356-06-9.

Optional

Hall, Brent and Leahy, Michael G. (Eds)

2008 Open Source Approaches in Spatial Data Handling (OSASDH). Springer.  
ISBN 978-3-540-74830-4

**Other materials:**

Handouts given by instructor

**Schedule:**

<b>Week</b>	<b>Topic</b>	<b>Readings</b>	<b>Labs</b>
Week 1	Free and Open Source Software Lect 1: FOSS Lect 2: Geospatial FOSS	- OSASDH :Ch 2	- Lab 1: Intro to Open Source GIS Web Resources - Lab 2: Introduction to QGIS
Week 2	Quantum GIS (QGIS) Lect 3: QGIS QGIS Plugins Lect 4: QGIS Plugins	- <i>The Cathedral and the Bazaar</i> - Arnulf Christl OSGeo Podcast - Chapter 2: Appendix A	- Lab 2: Introduction to QGIS - Lab 3: QGIS Analysis and Plugins
Week 3	INSTRUCTOR OUT Lecture 5: SpatialLite & PostGIS	- Desktop GIS: Appendix D.4 Plugins - OSASDH Ch: 5	- Lab 3: QGIS Analysis and Plugins - SpatialLite inclass
Week 4	GRASS GIS Lect 6: GRASS GIS	- OSASDH: Ch 9	- Lab 4: Intro to GRASS
Week 5	QGIS & GRASS GDAL/OGR Lect 7: GDAL/OGR	- Desktop GIS: Ch 12 - Desktop GIS: Appendix C	- Lab 5: QGIS & GRASS - GDAL/OGR inclass
Week 6	Lect 8:OpenStreetMap Georeferencing Introduce Final Project		- OpenStreetMap inclass - Georeferencing inclass
Week 7	Midterm Exam Introduction to FOSS4G Web Lecture 9: WWW and Google Maps		- Lab 6: Google Maps
Week 8	Internet & GoogleMaps Lecture 10: WWW Geospatial FOSS		- Lab 6: Google Maps
Week 9	INSTRUCTOR OUT 1 Day Mapserver & MapFiles	- OSASDH: Ch 4	- Lab 7: Intro MapServer
Week 10	Quiz Cartoweb		- Lab 8: Cartoweb Part 1
Week 11	Cartoweb	- OSASDH Ch 1	- Lab 9: Cartoweb Part 2
Week 12	QGIS and MapFile Final Project		- Final Projects

**Student Competencies:**

Upon successful completion of this course the student should be able to:

1. Understand the both the Free Software and Open Source (FOSS) business models
  - a. Distinctions between Open Source, Free Software & Proprietary models
2. How to get help while working with FOSS software
3. Show competency using FOSS Desktop software.
  - a. Understand how to add data to Quantum GIS (QGIS)
  - b. Understand what formats QGIS can work with
  - c. Understand how to symbolize data
  - d. Understand how to make a map
  - e. Understand how to work with coordinate systems in QGIS
  - f. Understand how to use QGIS plugins
  - g. Understand how to implement SpatialLite
  - h. Understand how to use GRASS GIS
  - i. Understand how to use QGIS as a front end to GRASS GIS
  - j. Understand how to use GDAL/OGR commandline tools
  - k. Understand how to do basic analysis with GRASS GIS
4. Understand the client – server architecture of a web application
5. Understand the basic components of web mapping using FOSS software
6. Understand how to implement a basic Google mashup
7. Show competency using FOSS web mapping software
  - a. Understand how to use MapServer
  - b. Understand where files go on the server
  - c. Understand how to read and write MapServer MapFiles
  - d. Understand how to stand up a basic Cartoweb front end to MapServer.
  - e. Understand the Cartoweb directory structure
  - f. Understand Cartoweb configuration Files

**Grading**

Laboratory	35%
Readings/Attendance	10%
Midterm	25%
Quiz	10%
Final Project	20%
<b>Total</b>	<b>100%</b>

The quiz and midterm are given in class and are closed book exams.

**Final Grade**

- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = Failing

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I = Incomplete  
W = Withdrew  
AU = Audit

### Academic Integrity

Students are expected to conduct themselves at all times with the highest academic standards. Cheating, falsifying work or plagiarism will not be tolerated. Students committing these offenses are subject to penalty ranging from a "O" on the assignment or test, to an "F" for the course. Students with repeat offenses are subject to disciplinary action up to and including expulsion.

### Attendance

Attendance will be taken at the beginning of each class. **Students with excessive absences (15% of total class hours: 5 class meetings) may be dropped from class.** Absences do not relieve students of responsibility for missed assignments and exams.

### Children on Campus

Children (and other non-students) are not allowed to accompany adults to class. All children who are under age 15, and are on TVI's campus, must be accompanied by an adult at all times.

### Electronic Devices

All cellular telephones, pagers and beepers must be turned off or switched to silent or vibration mode. Electronic entertainment devices are to be turned off and headphones removed.

### Technology Use Policy

Technology use on campus should be for instruction, learning, academic research and administrative purposes only. This complete policy can be found at [www.cnm.cc.nm.us](http://www.cnm.cc.nm.us) .