Geography 471/671 GIS Applications in Sustainability
Syllabus - SEM II 2014-15

Instructor: Eugene Martin. gmartin@uwsp.edu. Science B343.
Office hours: Mo 11-12 & 1-2; Tu 11-12 & 1-3; We 1-2; Th 11-1; or by appointment.

Course meeting times:

Type	Day	Hour	Location
Lecture & lab	M W F	12:00 - 12:50	Science D326

Course overview: GEOG471 explores the ways GIScience concepts and analysis methods can suppo[rt]
planning and implementation. A brief history and development of the sustainability movement establi[shes]
motivation and priorities of initiatives and connects with modes of GIS services that support commun[ity]
action. Characteristics of public participation GIS (PPGIS) frame the situatedness of GIS engaged for
empowerment. Discovery of sustainability issues, spatial data and analyses follows a conceptual and [path]
from local to global scales. These include population density, land cover change, urban growth/spraw[l,]
walkable neighborhoods, water resources, green infrastructure, landscape prioritization, footprint ana[lysis]
change. Approaches with GIS include measurement of indicators/change, resource optimization, reso[urce]
and proximity. Spatial data surveyed through the course comprise US decennial census, road network[s,]
NSIDC Arctic ice atlas, STRM, and utilities. Experience with these methods and data resources takes [place in]
laboratory exercises presented regularly through the semester. The situatedness of sustainability initia[tive]
implementation, and the GIS consultant's responsibilities are revisited repeatedly to better appreciate
technological support for socially based quality of life decision-making.

Prerequisites: Geog279, 476/676 or instructor permission

Instructor commitment: The instructor will a) present clear, engaging, challenging lecture/lab prese[ntations; b) conduct the]
course on schedule; c) challenge each student to question; d) conduct fair and equitable evaluation of [student work; e)]
encourage student participation; f) be available and accessible by email and office hours or appointme[nt; and g) respond]
to student needs/requests.
The instructor will not a) provide *the correct* answer without students' critical engagement of the que[stion; b) grade]
to an established curve; c) pretend to teach; d) let students pretend to learn.

Student commitment: Students are required to engage with the course through regular attendance, ac[tive participation, and]
successful completion of all assignments. Students are also expected to read all assigned materials and [come prepared with]
questions regarding the subject matter. As per the Student Handbook, students should anticipate two [hours of self study]
for each hour of lecture or lab. Geog471 consists of two lecture and two lab hours a week meaning stu[dents should expect an]
estimated eight hours of self study beyond scheduled lecture and lab times. Students having difficulty

course work should consult with the instructor before falling behind.

Student Rights and Responsibilities: Your rights and responsibilities within the UWSP campus com
required behavior by students and faculty within the classroom environment are detailed in these docu
http://www.uwsp.edu/admin/stuaffairs/rights/rightsCommBillRights.pdf
http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf.

Required text: The course text is *GIS for Sustainable Development*, edited by Michele Campagna an
Toward sustainable communities. See UWSP text rental: http://www.uwsp.edu/centers/textrental/ind
electronic copy of *GIS for Sustainable Development* is linked here. Readings from Pervis and Grango
Sustainable Development: Geographical Perspectives, Bell and Morse *Sustainability Indicators - Me
Immeasurable*, Wise and Craglia *GIS and Evidence Based Decision Making,* and other reading assig
available through UWSP Library E-reserve and the course D2L site. Expected dates for completion c
are listed with the lecture/lab schedule.   Knowledge and understanding of required readings is expect
lecture and lab instruction and demonstrations. Learning outcomes from these required readings will
lecture and lab presentations.

Desire2Learn (D2L): The course D2L page is a resource for lecture, lab and assignment manageme
expected to be familiar and proficient with all of D2L features and functions. Lecture/lab outlines are
content, required readings and related assignments. Note: D2L course resources are not a substitute f
lab. The lecture/lab content on D2L are not self-explanatory and do not support stand-alone self study
used for submission of all course deliverables. Discussion forums for lecture, lab assignments and ex
for questions and answers and all students are encouraged to participate or observe the postings becau
extend the dialog for better understanding of the course learning outcomes.

Software: ESRI's ArcGIS software with extensions will be employed for the applied exercise portion
same are used for lecture demonstrations.

SIAL Lab policies: Lab policies are posted on bulletin boards in the SIAL. See Mary Clare Sorenso
office to receive keys for the lab. Please pay attention to the rules for the keys on the signed form esp
will result is revocation of key privileges.

Attendance: This course adheres to the UWSP attendance policy. Attendance is expected for all cla
absences will be noted. Regular attendance and participation in lecture and lab sessions are an integra
learning in this course. Many themes presented in lecture and lab are not addressed in the required rea
content. University organization-sanctioned events, class field trips, death in the family, serious illne
are justifiable absences and will be considered for accommodation and a reasonable amount of additic
normal lecture, lab and office hours. If you miss a class, even for a legitimate reason, you are still res
material. Attendance will be periodically taken during lecture meetings. A penalty of three points fr
be registered after the third unexpected absence and an additional point for each absence thereafter.

Lectures: Lectures introduce the core geographic information science concepts and practical applica
developed in the lab assignments. These build upon and extend material introduced in the required re
presented in prior lecture/lab meetings. They are the richest source of concise and accessible insight
to complete assignments and realize the course learning outcomes.

Labs: The course features six exercises for practical application of the course concepts and GIS opera[...] introduced in lecture and some lecture meetings will be dedicated to working on the lab assignments. [...] set of software operation instructions and questions that address the process and meaningful outcome[...] worth nine points; exercise questions are short answer worth 1-3 points each. In most cases the exerci[...] time to complete than available in two to three lecture periods dedicated to the lab assignments (~100[...] anticipate some additional time commitment. Exercises are due generally 7-10 days after they are ass[...] through D2L drop boxes as a Word document. Exercises not submitted by the dropbox due date will r[...] Exercise outcomes will reviewed in lecture the week after the due date.

Exercise	Assigned	Due
Lab 1 Census and sustainability indicators		
Lab 2 Landscape texture and classification		
Lab 3 Urban morphology and sprawl		
Lab 4 Detecting landscape categories with texture		
Lab 5 Green infrastructure Neighborhoods: definition, delineation and		
Lab 6 Transportation and emissions		
Lab 7 Footprints, foodsheds and watersheds		
Lab 8 Bioregions, goods and services		

Exams: The midterm and final exams are each worth 15 points. These are mostly short answer with s[...] choice. Students receive a list of learning outcomes covered on the exam a week before the exam date[...] will be introduced in lecture/lab presentations. Time management during the exams is important; del[...] difficult to answer all questions completely. Students who do not take the midterm and final exams ar[...] passing grade.

Extra credit: Any student who wishes to improve their grade for a disappointing assignment or exam[...] credit assignment to make up for lost points. Extra credit points may not exceed the maximum points[...] assignment.

Evaluation: Final grades are based on points earned for successful completion of the lab exercises, a[...]

- 70% Laboratory exercises - Eight exercises worth 9 points each.
- 15% Midterm - 20 points.
- 15% Final - 20 points

Grades for all assignments will be posted to D2L. Be aware that the total points for the lab assignmen[...] each point is worth one percent of the final grade (See grading scale below). Grades will not be curve[...] extenuating circumstances. All students are eligible to earn an A; grades are not competitive.

Grading scale:

Points	Grade
93-100	A 4.0
90-93	A- 3.7
87-89	B+ 3.3
83-86	B 3.0
80-82	B- 2.7
77-79	C+ 2.3
73-76	C 2.0
70-72	C- 1.7
66-69	D+ 1.3
60-65	D 1.0
0 - 59	F

Graduate 671 requirements: Expectations and requirements for graduate students are different The
and grading scale for 671 are the same as 471 but the assignments and learning expectations are com
graduate level studies. Lab assignments, midterm exam and final exam have additional or more chall

Plagiarism: Plagiarism is defined in Chapter 14 of the UWSP Rights and Responsibilities section14.
you use someone else's ideas, even if you paraphrase them, and do not cite them. All assignments su
boxes are evaluated with Turnitin.com for plagerism. Answers to exam questions that are too similar
work will not receive a grade. See http://www.plagiarism.org for more explaination and steps you ca
plagiarism.

Disabilities: Students with disabilities or learning requirements of any nature should meet with the in
first week of classes to address satisfactory accommodation.

"Simply put, the greater the student's involvement or engagement in the academic experience of colle
her level of knowledge acquisition and general cognitive development" (*How College Affects Student*
Terenzini, 1991)

Getting help and how to succeed:

- *Attend lecture & lab meetings:* Regular lecture and lab section attendance is the single most ef
  toward success in Geog471. Lecture material builds upon and goes beyond the required readi
  for the lab exercises. You should anticipate difficulty with timely completion of the lab exerc
  lecture/lab and do not recover.
- *Follow the learning outcomes:* The learning outcomes listed on the lecture and lab pages are
  concepts of the course. They are what you need to know to succeed with GIS and are the basi
  and exams.
- *Notetaking:* Taking notes during class meetings is a proven means of knowledge retention. N
  omissions and areas of difficulty during study and office hour consultations. Students are enc

compare notes with other students to improve understanding and learning.

- *Participate:* You are *always* encouraged to participate in class and on the D2L discussion foru[...] questions and contributing observations and comments. Active participation will improve you[...] quantity and proficiency.
- *Meet with the instructor:* The instructor is available to address your individual learning needs [...] and by appointment. Scheduled office hours are open for drop-in consultation although prior [...] appreciated. Office hour topics include but are not limited to: a) further explaination of lectur[...] exercises; b) software tech support; c) project design and troubleshooting; d) exam preparatio[...] evaluation discrepancies. Office hours and appointments are also open for study groups or pr[...] on selected questions.
- *Submit assignments on time:* Prompt submission of required assignments by their due date is [...] credit.
- *Read the required readings:* Do this before the lecture/lab when they are discussed. Familiari[...] reading is expected and serves as the foundation for lecture presentations.
- *Exam preparation:* Pay attention to the learning outcomes associated with the lectures and lab[...] basis midterm and final. Make sure you know what is expected and practice answering the sa[...] provided.
- *Do your own work:* Any lab exercise deliverable or exam question with answers that are too s[...] work to be unmistakably original will not receive a grade. Please take care to insure that your[...] and not accessible to other students. All assignment deliverables are checked with Turnitin.c[...] plagiarism below.