

FOR 421/521
Spatial Analysis of Forest Landscapes
Winter, 2010
3 credits

Two classes per week: Mon. and Wed. 2:00-3:20 pm, 80 minutes

Instructors: Michael Wing and William Ripple

Prerequisite:

FOR 421: Senior standing and successful completion of a previous GIS course (GEO 365, FE 357, GEO 465/GEO 565, or the equivalent).

FOR 521: Graduate standing and successful completion of a previous GIS course (GEO 365, FE 357, GEO 465/GEO 565, or the equivalent).

Course Content

This course involves examining and applying geographic information systems (GIS) and related spatial technologies such as remote sensing and global positioning systems (GPS) for the study of forest landscapes. Students are presented with lectures and exercises that cover a wide range of topics including techniques and applications of spatial analysis and the design of landscape studies. Class meetings include lectures, guest lectures, and hands-on spatial analysis exercises in a computer lab. Students are required to complete lab assignments as well as design, propose, conduct, present, and write-up a large term project.

Measurable Student Learning Outcomes

Upon completion of the **FOR 421** and **FOR 521**, students will be able to:

1. Design and conduct spatial analysis projects.
2. Cite recent spatial analysis applications in forestry and natural resources.
3. Communicate scientifically with others in writing and orally regarding spatial analysis.

Additionally, **FOR 521** students will be able to:

1. Synthesize journal articles on topics of spatial analysis of forested landscapes.
2. Identify key issues involving spatial analysis and landscape studies.

Evaluation of Student Performance

Student performance in meeting learning outcomes in **FOR 421/521** will be evaluated through: Graded lab assignments, a term project proposal, and both a written report and oral presentation of the term project.

FOR 521 grades will be based additionally on assignments associated with reviewing, critiquing, and synthesizing scientific literature including:

- 1) Conducting a literature review and synthesis of a specific topic involving spatial analysis of forested landscapes.

GRADING

FOR 421/521 (100 points total)

FOR 421-- labs 40, proposal 10, term project 40, and class participation 10 points.

FOR 521-- labs 40, proposal 5, term project 40, class participation 10, and literature review 5 points.

Class attendance is mandatory, an attendance sheet will be taken (one point will be deducted from class participation points for each unexcused absence).

Letter grade % of total points for **FOR 421/521**

A 92.5-100

A- 90.0-92.4

B+ 87.5-89.9

B 82.5-87.4

B- 80.0-82.4

C+ 77.5-79.9

C 72.5-77.4

C- 70.0-72.4

D 60.0-69.9

F < 60.0

Assignments are due by 2 PM on dates indicated on the Class Calendar. Assignments not turned in during the class period may be placed in the box on the instructor's office door (Peavy 275). Late assignments will be assessed a late penalty of 1 point per day for labs, project proposal, or the literature review; 2 points per day for final project papers.

Learning Resources

1. Lecture and lab notes will be made available on the course website.

2. Optional textbook: M.G. Wing and P. Bettinger. 2008. Geographic information systems: Applications in natural resource management. Oxford University Press, Oxford. 272 pp. This textbook is on reserve at the Forestry Self-Learning Center, Peavy Hall 252. It is listed under FE 357.

3. Guest speakers and their power point presentations.

4. Journal articles that will be reviewed and analyzed by the graduate students.

Classroom Policies

Please see the OSU Student Conduct website:

<http://oregonstate.edu/admin/stucon/achon.htm>

OSU Policy on Students with Disabilities:

"Accommodations are collaborative efforts between students, faculty and Services for Students with Disabilities (SSD). Students with accommodations approved through SSD are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through SSD should contact SSD immediately at 737-4098."

**Spatial Analysis of Forest Landscapes
FOR 421/521**

Class Calendar Winter 2010
Monday and Wednesday, 2 to 3:20pm

Date	Lecture	Lab	Due
Jan 4	Course Overview, Introductions Lit Review Assignment ArcGIS Spatial Data Management	Lab 1 ArcGIS I	
Jan 6	Class Project Design Selection of project partners	Lab 1 ArcGIS 1	
Jan 11	Marbled Murrelet Models	Lab 1 ArcGIS 1	
Jan 13	Lab 2 Introduction	Lab 2 ArcGIS 2	Lab 1
Jan 18	MLK holiday-no class	Lab 2 ArcGIS 2	
Jan 20	John Sessions: Landscape Spatial Analysis	Lab 2 ArcGIS 2	Lit Review
Jan 25	Lab 3 Introduction: raster data analysis Topographic Spatial Data	Lab 3 Raster Modeling	Lab 2
Jan 27	Russ Faux: LiDAR Applications	Lab 3 Raster Modeling	
Feb 1	Large area spatial analysis Determine project presentation order	Lab 3 Raster Modeling	Project Proposal
Feb 3	Lab 4 Introduction	Lab 4 Habitat Model	Lab 3
Feb 8	Jim Strittholt	Lab 4 Habitat Model	
Feb 10	Map Projections	Lab 4 Habitat Model	
Feb 15	Lab 4 and final project work	Lab 4 Habitat Model	
Feb 17	Student Presentations-Lab 4 habitat model	Project Work	Lab 4
Feb 22	Robert Kennedy		
Feb 24	Student Presentations or final project work		
Mar 1	Student Presentations		
Mar 3	Student Presentations		
Mar 8	Student Presentations		
Mar 10	Student Presentations, Course Evaluation		Final paper