

See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department: College/School:

of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty/cd/credits.html> for more information on number of credits.

OTHER HOURS (specify type)

Students will spend additional time in completing homework assignments. This non-contact time will vary by students.

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES

These will be required before the student is allowed to enroll in the course.

15. SPECIAL RESTRICTIONS, CONDITIONS

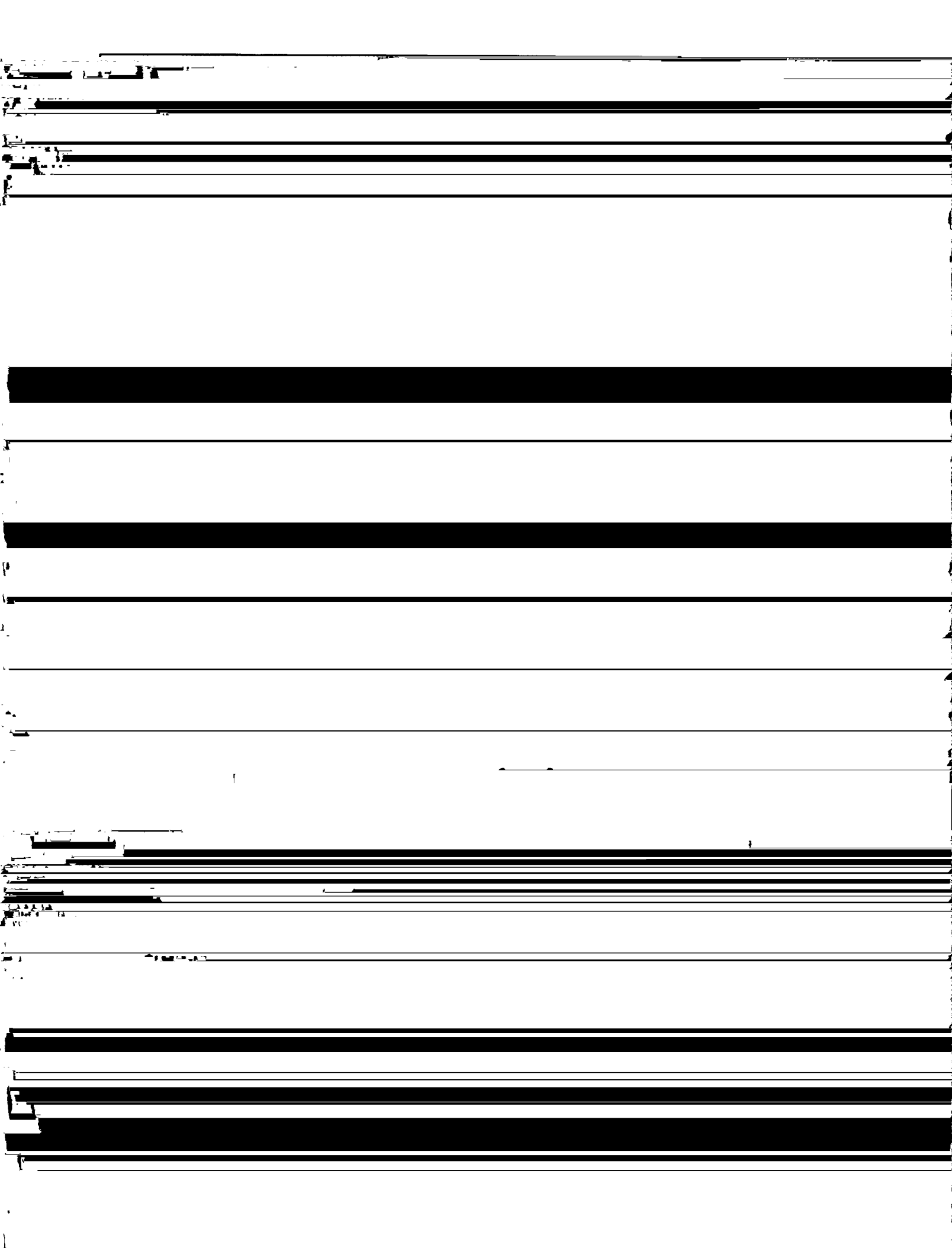
16. PROPOSED COURSE FEES

Has a memo been submitted through your dean to the Provost & VCAS for fee approval?

If yes, give semester, year, course #, etc.:

18. ESTIMATED IMPACT
WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

between the faculty and leadership in both departments (viz. Cary de Wit; Patricia Heiser; Dave Verbyla; Keith Cunningham; Don Atwood; Anunma Prakash; Bernard Coakley; Sarah Fowell). The



Syllabus for GEOS/GEOG 222 – Fundamentals of Geospatial Sciences

1. Course information:

Title: Fundamentals of Geospatial Sciences
Number: GEOS 222; GEOG 222
Credits: 3
Prerequisites: GEOG 111x or GEOS 101x or permission of instructor
Location: Lectures in WRRB Computer Lab; Room 004
Labs in WRRB Computer Lab; Room 004
Term: Every Fall
Meeting time: Lectures: Monday and Wednesday, 2.00 pm to 3.15 pm
Lab: Monday and Wednesday, 3.15 pm to 4.00 pm

2. Instructor Information (Proposed):

Fall (Even Years – Geography-lead instructor)	
<u>Dave Verbyla</u> Office: O'Neill 366 Telephone: 907-4745553 Email: dverbyla@alaska.edu	<u>Donald Atwood</u> Office: GI-206, UAF Telephone: 907-4747380 Email: dkatwood@alaska.edu

Fall (Odd Years – Geology-lead instructor)

- *Physical Principles of Remote Sensing*, by W. G. Rees, Cambridge University Press; 2nd edition, 360 pages. ISBN-13: 978-0521669481
- *Geographic Information Systems and Science, Second Edition*, by Paul Longley, Michael Goodchild, David Maguire, and David Rhind, John Wiley & Sons and ESRI Press, 2005, 524 pages. ISBN: 047087001X

- *GIS Fundamentals, 3rd Edition*, by Paul Bolstad, Atlas Books, ISBN: 978-0-9717647-2-9.
- *Getting to Know ArcGIS Desktop*, by Tim Ormsby, Eileen Napoleon, Robert Burke, Carolyn Groessl and Laura Bowde, ESRI Press, 2010, 604 pages. ISBN: 9781589482609.
- *Getting Started with Geographic Information Systems, 5th edition*, Keith C. Clarke, Pearson Prentice Hall, 2010, 384 pages. ISBN-10: 0131404088 ISBN-

Recommended journals and magazines:

- International Journal of GIS
- International Journal of Remote Sensing
- Geoinformatics
- Geospatial Solutions
- GIS Development
- GPS World

You are encouraged to make extensive use of UAF's investment in electronic journals. Familiarize yourself on the use of *Web of Science* and the *Goldmine* database of the Rasmuson library. There is a wealth of relevant literature there.

Student Learning Outcomes: By the end of the course, students will be able to

- *Understand* the fundamental principles in remote sensing imaging and geospatial data integration and analysis.
- *Search and download* relevant geospatial data required for a certain project/purpose.
- *Visually interpret* in a qualitative way a variety of images (optical, infrared, SAR) taken from airborne and satellite platforms.
- *Collect and import* GPS data using handheld recreational mode GPS units.
- *Project* digital data in different projection systems.
- *Compose* a simple cartographically sound map which integrates GPS data, with other geospatial data (vector data; raster maps and images).

~~Associate how geospatial data can be applied in the real-world for hazard~~

assessment, resource allocation, emergency management, change detection, and policy decision-making.

6. Instructional methods:

- 75 minute lecture followed by 45 minute lab, meeting twice a week.
- Lectures will be interactive and will involve use of power point presentations and group discussions. Material will be posted on the web if possible.

9. Grading Policy:

Your grades will be based on several factors as detailed below:

- 15%: Lectures and lab participation (see course syllabus)

- 20%: Lab assignments. Most labs require that you complete the lab work in class

accompanies the lab instructions. Make sure that you answer all questions and