NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course Canvas site for enrolled students and may be more current than this sample syllabus.

Course Name: GI Science I: Introduction to Geographic Information Science
Course Number: Geog 560
Credits: 4
Instructor name: Kuuipo Walsh
Instructor email: kuuipo.walsh@oregonstate.edu
Instructor phone: 541-737-3795
Link to instructor bio or website: http://ceoas.oregonstate.edu/profile/walsh/
Teaching Assistant name and contact info: TBD

Course Description
Introduction to modern spatial data processing, development, and functions of geographic information systems (GI systems); theory, concepts and applications of geographic information science (GI science).

Prerequisites: None

Communication
Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. The instructor will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Technical Assistance
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Service Desk for assistance. You can call (541) 737-8787, email via webform at http://is.oregonstate.edu/webform/contact-osu-service-desk or visit the OSU Service Desk online.

Le**arning Resources**
REQUIRED: Geographic Information Science and Systems by Longley, Goodchild, Maguire, and Rhind, 4th Edition. Wiley, 2015, 496 pp., ISBN: 978-1118676950.

OPTIONAL: GIS Tutorial 2: Spatial Analysis Workbook by Allen, 4th Edition, Esri Press, 2016, 344 pp., ISBN: 978-1589484535.

OPTIONAL: Getting to Know ArcGIS by Law, 4th Edition. Esri Press, 2015, 768 pp., ISBN: 978-1589483828.

Additional required Web Resources will be assigned.

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Measurable Student Learning Outcomes
By the end of this course students should be able to:

- Synthesize and integrate concepts of GIS theory and methodology, including data models, data structures, topology, and spatial analysis.
- Understand and articulate what geographic information science is and some of its topics and challenges.
- Begin to articulate the role of space as a source for explanation and understanding.
- Describe the functional basis of a GIS (i.e., how it works), including how it differs from other computerized systems, and why.
- Consider and evaluate the benefits and shortcomings of using GIS for a variety of natural resource applications.
- Outline the key data quality issues involved in using GIS and state the importance of metadata.
- Demonstrate basic GIS software skills in the Advanced (ArcInfo) portion of ArcGIS for Desktop, as well as basic scientific computing skills.
- Understand and articulate what GIS analysis is, understanding also that analysis is at the crux of GIS (not just holding data, organizing data, or making maps).
- Be able to perform a rudimentary spatial analysis in ArcGIS 10.5.1.
- More fully articulate the role of space as a source for explanation and understanding.
- Synthesize and integrate information, GIS analysis results, and interpretations from the GIS and Spatial Science literature.
- Employ written communication and computer technology skills by way of a term paper or web-based annotated bibliography.

Evaluation of Student Performance
Grading is based on results of labs, tests, and projects as follows:

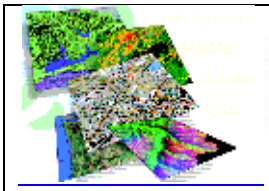
- Project – 300 points
- Labs – 200 points
- Midterm Exam – 200 points
- Final Exam – 300 points
- **Total – 1000 points**

Grading Scale
An A in this course is earned if a student earns 950-1000 points; 900-949 would be a A-; and so on.

- A = 950 -1000
- A- = 900-949
- B+ = 850-899

- B = 800-849
- B- = 750-799
- C+ = 700-749
- C = 650-699
- C- = 600-649 and so on.

Course Content



GEOG 560
GIScience I: Introduction to Geographic Information Science

Schedule for Keeping Up during the term– Subject to Change

Date	Topic	Lab Due Dates and Required Resources unless noted as optional
Week 0	1 - Introduction	Web Site of the Week (WSW)
Week 1	2 - What is a GIS? What is GI Science?	Longley et al., Chapters 1 and 3
	3 - What is GIS/GI Science? (cont.)	WSW1 | WSW 2 | WSW 3
Week 2	4 - The Nature of Geographic Data	Longley et al., Chapter 2 WSW1 | WSW 2 *Option choices due Wednesday*
	5 - Nature of Data (cont.)	Longley et al., Chapter 13.3.6 (p 313 – 317 only)
Sat	Lab 1 - ESRI Virtual Campus courses, Getting Started with GIS and Referencing Data to Real-World Locations Using ArcGIS	Lab 1 Due by 11:59 p.m. Pacific Time
Week 3	6 – Distributing Data / Metadata / NSDI	Longley et al., Chapter 10 2017 NW GIS User Group Conference
	7 – Metadata/NSDI (cont.)	Longley et al., Chapter 18.6 (p 426 – 432) WSW 1 - Framework | WSW 2 - Specialized

Sat	**Lab 2 - Vectors: Exploring a Marine Sanctuary**	**Lab 2 Due by 11:59 p.m. Pacific Time**
Week 4	**8 - GIS Data Capture: Getting the Map Into the Computer**	**Longley et al., Chapters 7 and 8** **WSW 1/ WSW 2**
	9 - Map Into the Computer (cont.) Review for Midterm	**Learning Assessment - Practice Midterm See also the topology practice and key**
Sat	**Lab 3 - Rasters: Stormwater Pollution**	**Lab 3 Due by 11:59 p.m. Pacific Time**
Week 5	**MIDTERM EXAM via Canvas** ***Exam will actually be available over a range of days***	**Get good sleep, eat good carbs for brain food and take exam in one sitting.**
	10 - What is Where?	**Longley et. al., Chapter 9**
Sat	**Lab 4 - Vectors, Rasters: Invisible Boundaries**	**Lab 4 Due by 11:59 p.m. Pacific Time**
Week 6	**11 - Spatial Analysis I**	**Longley et. al., Chapters 13 & 14** **WSW1 | WSW 2 | WSW 3**
	12 - Spatial Analysis II	**Longley et. al., Chapter 5**
Sat	**Lab 5 - ESRI Virtual Campus, Solving Spatial Problems Using ArcGIS**	**Lab 5 Due by 11:59 p.m. Pacific Time**
Week 7	**13 - 3-D & Temporal GIS**	**Longley et al., Chapter 12.4.2 (p. 282 – 284)** **Next-generation Digital Earth** **WSW1 / WSW2 / WSW3**
	Veterans Day	**No classes**
Sat	**Lab 6 - Spatial Analysis: Landslide Susceptibility**	**Lab 6 Due by 11:59 p.m. Pacific Time**
Week 8	**14 - 3-D & Temporal GIS cont.**	**ArcGIS 3D GIS**
	15- GIS in Action I	**Optional: Longley et al., Biographical Boxes**

	Guest Speaker	
Sat	**Lab 7 - ESRI Virtual Campus, 3D Visualization Techniques Using ArcGIS**	**Lab 7 Due by 11:59 p.m. Pacific Time**
Week 9	**16/17 - GIS in Action II** ***Guest Speakers***	**Oregon & Washington** **GIS in Action Conference**
	Thanksgiving Holiday	**Observed Nov 23-24: No classes**
	Lab 8 - Terrain Visualization	**Lab 8 Due by 11:59 p.m. Pacific Time**
Week 10	**18 - The Future of GIS I**	**Longley et al., Chapters 12, 17 & 19** **Practice Final**
	19 - The Future of GIS II	**Course Evaluations** **Review for Final**
Sat	**Bibliographies / Term Papers**	**Annotated Bib. Web Sites (Option 1) or Term Papers (Option 2)** **Due by 11:59 p.m. Pacific Time**
Week 11	**FINAL EXAM via Canvas** ***Exam will actually be available over a range of days to accommodate everyone's schedules.***	**Relaaaaax!**

Course Policies

Makeup Exams

Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

Incompletes

Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 70% of the points possible (in other words, usually everything but the final project or final exam). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let me know right away.

Late Assignments
Assignments will be given each week, with the exception of the last two weeks (weeks 9 and 10). In general, all labs turned in late will be docked 10% of the total points possible. Exceptions may be made if you run into technical difficulties that we are unable to resolve prior to when the lab is due. Such exceptions are at the discretion of the TA and are more likely to be made if you let the TA know about a problem well ahead of the due date. No labs will be accepted more than one week after their due date. If you are unable to turn a lab in on time due to exceptional personal circumstances or illness, please contact the TA before the lab is due to discuss the possibility of an alternate due date.

Guidelines for a Productive and Effective Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities
Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials
All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct
Student conduct is governed by the university's policies, as explained in the Student Conduct Code.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards at 541-737-3656.

Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.
b) It includes:
    a. Cheating. Unauthorized assistance, or access to or use of unauthorized materials, information, tools, or study aids. Examples include, but are not limited to, unauthorized collaboration or copying on a test or assignment, using prohibited materials and texts, unapproved use of cell phones, internet, or other electronic devices, etc.
    b. Plagiarism. Representing the words or ideas of another person or presenting someone else's words, data, expressed ideas, or artistry as one's own. Examples include, but are not limited to, presenting someone else's opinions and theories as one's own, using another person's work or words (including unpublished material) without appropriate source documentation or citation, working jointly on a project and then submitting it as one's own, etc.
    c. Falsification. Fabrication or invention of any information. Examples include, but are not limited to, falsifying research, inventing or falsely altering data, citing fictitious references, falsely recording or reporting attendance, hours, or engagement in activities such as internships, externships, field experiences, clinical activities, etc.
    d. Assisting. Any action that helps another engage in academic misconduct. Examples include, but are not limited to, providing materials or assistance without approval, altering someone's work, grades or academic records, taking a test/doing an assignment for someone else, compelling acquisition, selling, bribing, paying or accepting payment for academic work or assistance that contributes to academic misconduct, etc.
    e. Tampering. Interfering with an instructor's evaluation of work by altering materials or documents, tampering with evaluation tools, or other means of interfering.
    f. Multiple submissions of work. Using or submitting work completed for another or previous class or requirement, without appropriate disclosure, citation, and instructor approval.
    g. Unauthorized recording and use. Recording and/or dissemination of instructional content without the express permission of the instructor(s), or an approved accommodation coordinated via Disability Access Services.
c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Conduct in this Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

Tutoring
NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access.

NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.