

GEOG 9418B – Remote Sensing Digital Image Analysis Course Outline: Winter 2019

1. Course Information

1.1. Classroom Location:

Class Location and Time: Mondays 2-4pm in SSC 2322E

1.2. Contact Information:

Instructor: Dr. Jinfei Wang

Office: SSC 2402

Office Hours: Mondays 4-5pm, SSC 2402

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The Department of Geography strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities. Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2147 for any specific question regarding an accommodation.

More information about “Accessibility at Western” is available at: <http://accessibility.uwo.ca>

2. Calendar Description

An in-depth study of current algorithms in remote sensing digital image processing and analysis. Topics may vary depending on students’ interests, such as hyperspectral data analysis, textural analysis, object-oriented classification, polarimetry SAR radar data processing and analysis, change detection, structural pattern recognition and integration with GIS.

Pre-requisite: Must have taken at least one remote sensing course and have enough remote sensing knowledge and image processing skills. You may be required to attend the lectures/labs of an undergraduate remote sensing course if needed. Please feel free to contact me.

3. Course Work

In this course, each student is required to complete a literature review and a remote sensing research project. A journal paper format is followed. The objective is to be familiar with the current remote sensing research, and learn how to conduct literature review, collect and analyze remotely sensed data, be familiar with remote sensing image analysis software, and present research results.

4. Evaluation

Evaluation Component	Percentage of Course Grade
Class participation, including discussions	10%
Abstract (Word format) and literature review presentation(ppt)	10%
Methodology and data analysis (ppt)	10%
Full paper (Word format)	50%
Oral presentation (ppt)	20%

Step 1: Selection of a topic and literature review (Due date: Monday, Feb. 11, 2019)

Submit an abstract or summary of the paper (around 500 words).

Presentation of literature review. Submit your ppt file, including a list of references.

In class discussion of research topics.

Abstracts are limited to 500 words and must include:

- Paper Title
- Author Name(s)
- Institutional affiliation(s)
- Complete mailing Address
- Phone, Fax, and E-mail for all authors and presenters
- Describe the research question(s), main objectives, study area, methods to be used and anticipated results.
- 3 - 5 key words.

The literature review should provide background and current development in the proposed research area: What has been done? What needs to be done? Has someone done the exact same as you proposed? What is new and innovative with your proposed research? It should be a critical review, not just to describe who did what.

Step 2: Data collection (Due date: Feb.25, 2019)

Data collection for your project involves two tasks: Collection of remotely sensed data and ground truth data. In class discussion (show and tell) of collected data.

Step 3: Methodology and Data Analysis Presentation (Date: March 11, 2019)

Presentation of methodology, data analysis and image processing of your project.

- Submit your ppt presentation for the data analysis.

Step 4: Full paper (Due date: April 8, 2019)

For the full paper, you may follow the format from one of the international remote sensing journals

For example: <http://www.mdpi.com/journal/remotesensing/instructions>

- Submit your term paper in WORD format

Step 5: Oral presentation (Date: April 8, 2019)

Oral presentation (20 minutes):

- Submit your powerpoint file

Students are **REQUIRED TO COMPLETE ALL COMPONENTS** of this course. There are no exceptions to this. Extra assignments to improve grades **will NOT** be accepted.

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: You are responsible for your grades in this course.

5. University Policy Regarding Illness

5.1. Illness

Please visit the link to the university policy for more information.

<http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=- Page 12>

If you feel that you have a medical or personal concern that is interfering with your work, you should contact your Instructor, Graduate Program Administrator, Supervisor, or SGPS.

5.2. Attendance

It is expected that students will attend all classes. The professor does not provide access to lecture notes. Students are encouraged to obtain missed lecture notes from a fellow student.

6. Statement on Academic Offences

The statement: "Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

7. Scholastic Discipline for Graduate Students

For the complete policy and regulations see: http://grad.uwo.ca/current_students/regulations/13.html

8. Procedures for Appealing Academic Evaluations

Students may appeal an academic decision or ruling in accordance with the appeal procedures set out below. Students have a right to appeal to their graduate programs and, if unsuccessful, to the Vice-Provost (Graduate and Postdoctoral Studies). Some decisions may be appealed further to the Senate

Review Board Academic. The Vice-Provost's rulings in academic matters are final unless overturned or modified on appeal to the Senate Review Board Academic (SRBA).

For the complete policy and regulations see: http://grad.uwo.ca/current_students/regulations/13.html

9. Support Services

9.1. Support Services

Student Support Services can be reached at: <http://westernusc.ca/services/>

Student Development Services can be reached at: <http://www.sdc.uwo.ca/>

Students who are in emotional/mental distress should refer to Mental Health@Western http://www.health.uwo.ca/mental_health/ for a complete list of options about how to obtain help.

9.2. Short Absences

If you miss a class due to minor illness or other problems, check your course outline for information regarding attendance requirements and make sure you are not missing a test or exam. Cover any readings and arrange to borrow the missed lecture notes from a classmate.

9.3. Extended Absences

If you expect to be away from campus for an extended amount of time, please make prior arrangements with your course instructors and/or supervisor.

For the complete policy on registration, see: http://grad.uwo.ca/current_students/regulations/4.html

9.4. Academic Concerns

If you are in academic difficulty, it is strongly recommended that you see your Graduate Program Administrator, Supervisor, or SGPS.

10. Other Information

For a list of Graduate Regulations, please visit:

http://www.grad.uwo.ca/current_students/regulations/index.html

For The University of Western Ontario Senate Regulations, please see the Handbook of Academic and Scholarship Policies at: http://www.uwo.ca/univsec/academic_policies/index.html

Email Policies: Please respect the fact that Professors receive multiple emails from students and will deal with those emails in a fair, organized and timely manner. Please ensure the subject line contains the name, number and section of the course in question.