

GEOG 201 – Fall 2014
Introductory Geo-Information Science

Lectures: Wed/Fri: 1:05pm – 2:25pm Room: Burnside Hall 1B45	Instructors: Dr. Raja Sengupta (raja.sengupta@mcgill.ca) and Dr. Bernhard Lehner (bernhard.lehner@mcgill.ca)
Laboratory (1 of 4 sections): Tue: 4:35pm – 7:25pm Wed: 8:35am – 11:25am Thu: 5:05pm – 7:55pm Fri: 8:35am – 11:25am Room: Burnside Hall 511	Office hours: RS: Thu 2-3:30 in Burnside Hall 412 BL: Wed 3-4:30 in Burnside Hall 612 or by appointment TAs: Camille O. Dallaire (camille.ouelletdallaire@mail.mcgill.ca) Gabriela Ifimov (gabriela.ifimov@mail.mcgill.ca) Dipto Sarkar (dipto.sarkar@mail.mcgill.ca)

Course Overview

This course will explore the structure, design, science, and applications of digital geospatial information and geospatial technologies. These include Geographic Information Systems (GIS), Global Positioning Systems (GPS) and Remote Sensing. Students will learn how to store, retrieve, manipulate, analyze, and display spatial data derived from various sources. This course will use the most popular programs, including ArcGIS, ENVI, Quantum GIS (Open Source) and Google Earth.

Required Textbook

Shellito B.A. *Introduction to Geospatial Technologies*, W.H. Freeman and Company, 2nd Edition 2014.

The textbook can be purchased at the Paragraphe Bookstore (corner Sherbrooke Street and Avenue McGill College). Four copies of the textbook will be available from the GIC counter. The textbook will also be available on reserve from the Library.

Additional required readings throughout the term will be presented in the lectures and posted on MyCourses.

The following texts are also available in the library to use as supplemental reading.

Students are strongly encouraged to consult these (or other) sources as needed:

1. Chang, K.T., 2013: *Introduction to Geographic Information Systems* (7th Edition), McGraw-Hill: NY.
2. DeMers, M.N., 2005: *Fundamentals of Geographic Information Systems* (3rd Edition), John Wiley and Sons.
3. Kennedy, M., 2013: *Introducing Geographic Information Systems with ArcGIS : a workbook approach to learning GIS*, John Wiley (available as e-book at McGill)

Evaluation

Lab Assignments: 35% (6 laboratory assignments worth 7% each; best 5 out of 6 count)

Midterm: 30%

Final Exam: 35%

Electronic Resources

Course related information, lecture notes and announcements will be posted on MyCourses and all students are expected to follow these updates on a regular basis.

Supplemental readings will also be posted on MyCourses. The material in these readings is intended as a resource for further study or clarification through examples.

Course policies

Regular attendance is expected at both lectures and laboratories. Laboratories will begin the week of September 8th.

Students are required to sign-up for one of the four laboratory sections. Students who choose not to attend the scheduled lab sessions must complete the assignments on their own and hand in the completed assignments by the due date specified on the assignment for the section that they are signed up for on Minerva.

Late assignments will be penalized by 10% (from maximum score) cumulative per 24 hr period unless permission to miss the deadline has been received in writing from the instructor. Lab assignments will be handed in via MyCourses. Any assignment not uploaded by the due date **and** time (EST) is considered late.

Excuses for a missed midterm exam will only be accepted in cases of medical necessity (physician's note required) or other documented personal emergency. The midterm exam will be held during regular lecture hours, room(s) TBD.

We **strongly encourage** office hour visits in lieu of email for questions regarding course material. For questions pertaining to laboratory material, your first point of contact is your TA.

Mobile computing and communications devices are permitted in class under the following condition(s):

- *When the "No technology time" is not in effect (e.g. not permitted during exams, unless otherwise stated)*
- *Only for the specified use; e.g. note taking, consulting online resources*
- *Personal activities such as updating social networking sites (e.g. Facebook, GTalk, Jabber, ICQ, IRC, AIM, MSN, LinkedIn, etc) phone text messaging, online shopping, emailing, etc., etc., are strictly prohibited during class.*

Planned schedule

Date	Topic	Laboratory <i>(depending on the chosen section, labs start as early as Monday of the indicated week and have a two week period to be completed and handed in—official due dates are assigned on the lab handouts)</i>
Sept. 3	Introduction (BL/RS)	
Sept. 5	Data collection (RS)	
Sept. 10	Spatial data models (RS)	Lab 1. Getting to know the tools
Sept. 12	Levels of measurement (RS)	
Sept. 17	Projections (RS)	
Sept. 19	Projections (RS)	
Sept. 24	GPS (RS)	Lab 2. Mapping and projections
Sept. 26	Cartography and Visualization (RS)	
Oct. 1	Cartography and Visualization (RS)	
Oct. 3	Vector analysis (RS)	
Oct. 8	Vector analysis (RS)	Lab 3. GPS
Oct. 10	Cartographic Modelling (RS)	
Oct. 15	<i>T.b.d.</i>	
Oct. 17	Midterm	
Oct. 22	Data and database management (BL)	Lab 4. Vector analysis
Oct. 24	Data and database management (BL)	
Oct. 29	Raster analysis (BL)	
Oct. 31	Raster analysis (BL)	
Nov. 5	Remote sensing: Intro (BL)	Lab 5. Databases
Nov. 7	Remote sensing: Earth observation (BL)	
Nov. 12	Data quality (BL)	
Nov. 14	Metadata (BL)	
Nov. 19	GIS Day (guest)	Lab 6. Raster analysis
Nov. 21	Applications: Digital landscaping (BL)	
Nov. 26	Current developments: Web and cloud (BL)	
Nov. 28	<i>T.b.d.</i>	

NOTE: This outline may change based on class progress and the availability of speakers for presentations

Other matters

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/srr/honest/ for more information).

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/students/srr/honest/).

For information on university and department policies for student assessment, please go to <http://www.mcgill.ca/geography/studentassessment>.

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this.