

York University: Department of Geography

**GEOG2340: Geoinformatics: Introduction**

<b>Contact</b>	<b>Instructor</b>	Dr. Tarmo K. Remmel
	<b>Office</b>	North Ross 423
	<b>Email</b>	<a href="mailto:remmelt@yorku.ca">remmelt@yorku.ca</a>
	<b>Phone</b>	416-736-2100 x2249
	<b>Twitter</b>	@TKRspatial
	<b>Web</b>	<a href="http://www.yorku.ca/remmelt">http://www.yorku.ca/remmelt</a>
	<b>Moodle</b>	<a href="http://moodle.yorku.ca">http://moodle.yorku.ca</a>
	<b>Office Hours</b>	Tuesday 0930-1030h



**Synopsis** Geoinformatics integrates computer science, geosciences, certain branches of engineering, and cartography such that the geographical context of any phenomena can be measured, quantified, presented, and analyzed. In essence, geographic position forms a critical component in a new information infrastructure. This course will introduce and explore the historical context to geoinformatics by tracing some of the more important historical developments before examining many of the sub-domains of this discipline. We will explore and provide experience with cartography, global positioning systems (GPS), vector and raster geographic information systems (GIS), surveying, photogrammetry, remote sensing, visualization, and other related topics. This course is suitable for geographers and education students majoring in geography, or those genuinely curious about technologies related to geographical analysis, this course will provide a foundation to geoinformatics and basic computer cartography. Computers will be used in the lab sessions and basic computer skills are a prerequisite. Some fieldwork on campus is required.

<b>Meetings</b>	<b>Lectures</b>	Thursday 1030-1230h, DB 1005	
	<b>Lab 01</b>	Thursday 1230-1430h, North Ross 302	TA: TBA
	<b>Lab 02</b>	Thursday 1430-1630h, North Ross 302	TA: TBA

**Prerequisites** AP/GEOG1000, AP/GEOG1400, AP/GEOG1410, or written permission from the course instructor

**Exclusions** LE/EATS 2610, SC/ENG2110, AP/SC/AS/GEOG2350

<b>Evaluation</b>	<b>Description</b>	<b>Weight (%)</b>	<b>Due</b>	<b>Submission Format</b>
	Assignment 1	8	11 January	Moodle
	Assignment 2	14	01 February	Moodle
	Mid-term Test	18	14 February	In Class
	Assignment 3	12	01 March	Moodle
	Assignment 4	12	29 March	Moodle
	Discussion Forum	10	Biweekly topics	Moodle
	Participation	21	Random	iClicker Reef (In Class)
	Attendance	5	Weekly	iClicker Reef (In Class)

**Accessibility** If you have a disability or health consideration that may require accommodation, please approach me as early as possible: <http://www.yorku.ca/secretariat/policies/document.php?document=68>

**Missed Assessments** With no exceptions, my course policy is that there will be no rescheduled assessments. You are strongly encouraged to not miss classes or labs, but specifically the midterm test. With appropriate documentation and approval by the course instructor, the weight of the missed assessment *may* be redistributed as deemed appropriate by your instructor.

**Textbook** Shellito, B.A. 2017. Introduction to geospatial technologies (4<sup>th</sup> ed.). NY: Freeman.

**Expectations** **Knowledge:** This course is taught as an introduction to geoinformatics and requires some quantitative analysis and problem solving. Some background in geography, computer use, arithmetic, and geometry will be helpful as we build on these to develop understanding of basic geoinformatics principles. This course will expand your theoretical and applied knowledge, allowing you to think critically and discover the world from new perspectives.

**Skills:** Strive to continually improve your skills. Skills related to time management, reading, writing, comprehension, statistics, computing, and any other method can always be improved. Prior familiarity with computers and basic mathematics will greatly reduce your learning overhead; however, this course is designed to help you build a foundation of skills necessary to understand key principles and to prepare for additional courses in related disciplines. **This course will require practice with the software outside of normally scheduled labs.**

**Attitude:** Be positive! Your active participation is expected as is your willingness to explore new ideas and approaches to problem solving, while developing academic independence. An important part of this process is to interact with your TA and instructor; I am here to help you succeed, but it requires your desire to learn.

**Penalties** **Late Submission of Work**

- Late submission of course work will be docked 15% of the total assignment value per calendar day. The first 15% penalty is applied at the moment the deadline has passed; subsequent penalties are then applied every 24 hours thereafter that the work is not submitted.
- Penalties accumulate until the work is submitted or a grade of zero is reached.
- Upon dire documented medical or personal reasons and upon individual consultation with the course instructor, extensions may be granted for course work.

**Non-original Work: (<http://www.yorku.ca/academicintegrity>)**

- Submitted work must be entirely original, relevant, and completed by the registered student submitting the material.
- If any part of your submitted work is deficient in this respect, it will be investigated as a potential academic offence (this is a not pleasant experience for any party involved). I remind you that when copying someone else's work, **both** parties are equally at fault.

Schedule	Date	Topic
	03 Jan	Introduction, Coordinates (Ch. 1)
	10 Jan	Datums, Geoids, and Projections (Ch. 2, 3)
	17 Jan	Surveying
	24 Jan	GPS Theory (Ch. 4)
	31 Jan	GPS Applications, Vector GIS (Ch. 1, 4, 5)
	07 Feb	Raster GIS, Review (Ch. 5)
	14 Feb	Mid-term Test, GIS Applications and Data Integration (Ch. 6, 8)
	21 Feb	-- Winter Reading Week: No Class --
	28 Feb	Aerial Photography, Photogrammetry (Ch. 9)
	07 Mar	Electromagnetic Spectrum, Optical Remote Sensing (Ch. 10-11)
	14 Mar	Boundaries, LiDAR (Ch. 13)
	21 Mar	Computer Cartography, Visualization (Ch. 7, 14)
	28 Mar	Data Loggers, Sensor Networks, Future Directions, Review (Ch. 15)

**Notice** If necessary, in the best interest of the course, the instructor reserves the right to modify this schedule.