

MANAGEMENT ISSUES IN GEOGRAPHIC INFORMATION SYSTEMS WINTER 2023

GEOG 487 / PLAN 487

Published Dec 21, 2022

CLASS SCHEDULE

Section	Location	Time	Instructor(s)
GEOG 487 001 [SEM]	EV3 3412	Tuesdays 8:30 a.m. - 11:20 a.m.	Matthew Davis matthew.davis@uwaterloo.ca
PLAN 487 001 [SEM]		Tuesdays 8:30 a.m. - 11:20 a.m.	

This table is generated automatically

INSTRUCTOR / TA INFORMATION

Instructor:

Matthew Davis

Matthew.davis@uwaterloo.ca

Office hours: TBA

Teaching Assistants:

TBA

*Note: teaching assistants are not able to grant extensions or accommodations. Please direct these inquiries to the instructor.

COURSE DESCRIPTION

Calendar Description for GEOG 487

Built around a set of key issues in the management of Geographic Information Systems (GIS). Focuses on middle management concerns and covers topics including GIS needs assessment, benchmarking, the law and spatial data, spatial data warehousing, multi-user GIS modelling and GIS application development. Uses of GIS in both public and private sector organizations are covered.

Prereq: GEOG/PLAN 355 or GEOG/PLAN 381 or GEOG/PLAN 387 or GEOG/PLAN 455. Antireq: GEOG/PLAN 555

Calendar Description for PLAN 487

Built around a set of key issues in the management of Geographic Information Systems (GIS). Focuses on middle management concerns and covers topics including GIS needs assessment, benchmarking, the law and spatial data, spatial data warehousing, multi-user GIS modelling and GIS application development. Uses of GIS in both public and private sector organizations are covered.

Prereq: GEOG/PLAN 355 or GEOG/PLAN 381 or GEOG/PLAN 387 or GEOG/PLAN 455. Antireq: GEOG/PLAN 555

In this course we will explore various topics and key issues related to building and executing on Geographic Information Systems. We will develop technical and informational elements to support communicating ideas in a complex technical atmosphere. You will leverage various GIS technology at the desktop, mobile, and internet delivery level.

LEARNING OUTCOMES

By the end of this course students should be able to:

Build, share, and deploy GIS applications using the desktop, mobile, and internet delivery models.

Develop iterative technology plans, roadmaps, and project scopes in response to technical requests.

Create conceptual technical elements and visioning in GIS.

Interpret and build responsive technology in phases.

TENTATIVE COURSE SCHEDULE

Week	Date	Content Title	Assignment Due In-Class
Wk1	Jan 10	Innovation in Geospatial Industries	
Wk2	Jan 17	Communicating Technical Elements	
DESIGNING TECHNOLOGY PLANS			
Wk3	Jan 24	Project Charters, Plans, Resources, and Scoping	AS1
Wk4	Jan 31	Legal and Ethical Issues in GIS.	
Wk5	Feb 7	Generalists vs. Specialists.	
Wk6	Feb 14	The Procurement Process in GIS.	AS2

Reading Week Feb 18 – Feb 26

Wk7	Feb 28	Business Advantage and Competition in GIS.	
Wk8	Mar 7	Technology Roadmaps, Gantt Charting, Tree Testing.	AS3

BUILDING ADVANCED GEOGRAPHICAL INFORMATION SYSTEMS

Wk9	Mar 14	Automation and Simplification in GIS Products.	
Wk10	Mar 21	Hardware, Software, and Smart Cities; Artificial Intelligence in GIS.	
Wk11	Mar 28	Subjectivity of Design – User Experience, Products.	
Wk12	Apr 4	Course Wrap up – Project Submission.	AS4

TEXTS / MATERIALS

Title / Name	Notes / Comments	Required
The Design of Everyday Things, Basic Books, 2013	Available at various online retailers.	Yes

STUDENT ASSESSMENT

Component	Value
AS1 - Communicating Technical Information Assignment	15
AS2 - Business Advantages and Ethics Assignment	15
AS3 - Technology Plan Assignment	30
AS4 - Advanced Geographical Information System Assignment	30

Component	Value
EX1 - Final Exam	10

ASSIGNMENT SCREENING

No assignment screening will be used in this course.

ADMINISTRATIVE POLICY

Intellectual Property: For further information on IP related to teaching, please see https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume_1_issue_3_winter_2018.pdf (https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume_1_issue_3_winter_2018.pdf) and the Guidelines for Faculty, Staff and Students Entering Relationships with External Organizations Offering Access to Course Materials, <https://uwaterloo.ca/secretariat/faculty-staff-and-students-entering-relationships-external> (<https://uwaterloo.ca/secretariat/faculty-staff-and-students-entering-relationships-external>) . The following text is recommended:

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).

Mental Health: The University of Waterloo, the Faculty of Environment and our Departments/Schools consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges - physical and / or emotional. **Please note that help is available.** Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services <https://uwaterloo.ca/campus-wellness/>

(<https://uwaterloo.ca/campus-wellness/>) is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

All students are encouraged to download the WatSAFE app which is available free through the google and iOS app stores. The WatSAFE app provides on- and off-campus contacts for students in distress, including international students, and other information related to campus safety and security.

Religious Observances: Students need to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Communications with Instructor and Teaching Assistants: All communication with students must be through either the student's University of Waterloo email account or via LEARN. If a student emails the instructor or TA from a personal account they will be requested to resend the email using their personal University of Waterloo email account.

Recording lecture: Use of recording devices during lectures is only allowed with explicit permission of the instructor of the course. If allowed, video recordings may only include images of the instructor and not fellow classmates. Posting of videos or links to the video to any website, including but not limited to social media sites such as: facebook, twitter, etc., is strictly prohibited.

UNIVERSITY POLICY

Academic integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.]

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70, Student Petitions and Grievances, Section 4](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) . When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. [Check [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to [Policy 71, Student Discipline](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) . For typical penalties, check [Guidelines for the Assessment of Penalties](https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties) (<https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties>) .

Appeals: A decision made or penalty imposed under [Policy 70, Student Petitions and Grievances](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) (other than a petition) or [Policy 71, Student Discipline](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to [Policy 72, Student Appeals](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72>) .

Note for students with disabilities: [AccessAbility Services](https://uwaterloo.ca/disability-services/) (<https://uwaterloo.ca/disability-services/>) , located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic

accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit alternate assignment.