

GEOL487 COURSE SYLLABUS

COURSE TITLE: Geophysical field methods

COURSE CODE: GEOL 487.3

COURSE CREDITS: 3

TERM: Fall 2026

DELIVERY: Practical

SEISWEB link: <http://seisweb.org/classes/GEOL487/2026/WWW/index.html>

CATALOGUE link: <https://catalogue.usask.ca/GEOL-487#top>

START DATE: August 24, 2026

LAB LOCATION: see schedule at the seisweb site.

Course Description

<https://seisweb.org/classes/GEOL487/2026/WWW/index.html>

The following description is slightly modified from what is shown in the catalogue:

A course in geophysical field methods for both Geophysics and non-Geophysics majors who require experience with field techniques. Gravity, electric, magnetic, electro-magnetic, and seismic surveys will be performed over appropriate targets.

Following this course, Geophysics majors will be required to take GEOL488.3 to analyze and interpret some of the data.

The field part of the course will run from August 24 – August 31. In the event that weather prevents us from working one day, we may extend the field school to September 1.

Prerequisites

GEOL 384 or (334 and 335)

Instructors

Igor Morozov: igor.morozov@usask.ca; website: <http://seisweb.org/ibm/index.html>

Sam Butler: sam.butler@usask.ca

Learning and Teaching Context

This is a field-based class that will run from August 24-August 31 where you will gain experience in conducting a wide array of geophysical investigations.

You will be provided with a safety document that we will go over on the first day, you will sign it, and we will review it prior to each field activity. The document is available at <https://seisweb.org/classes/GEOL487/2026/WWW/index.html>.

Learning Outcomes

By the completion of this course, students will be expected to:

- 1) Be familiar with the use of various geophysical field techniques and have some practical experience using them;
- 2) Have experience with the basic analysis of various types of geophysical data;
- 3) Have an ability to interpret geophysical data in terms of geology and physical properties of the subsurface;
- 4) Have an understanding of the areas of applicability, strengths and limitations of various geophysical techniques.

Information on literal descriptors for grading at the University of Saskatchewan can be found at: <http://students.usask.ca/academics/grading/grading-system.php>

- Please note: There are different literal descriptors for undergraduate and graduate students.

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

<http://policies.usask.ca/policies/academic-affairs/academic-courses.php>

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: <https://teaching.usask.ca/about/policies/learning-charter.php>

Class Schedule

<i>Weeks</i>	<i>Module</i>	<i>Readings</i>
August 24 – August 31, possibly Sept. 1	Fieldwork – see schedule in ‘Files’ under https://seisweb.org/classes/GEOL487/2026/WWW/index.html link	<i>Not required:</i> Milsom 1968. Field Geophysics 1988 Ground Engineering Ltd report on Peturrson’s ravine
September 1 – December 1	Several scheduled meetings to review and discuss results You will write a 5-page report describing one of the field techniques, the data that we collected, and the results obtained.	Christiansen, E.A. 1968. Pleistocene stratigraphy of the Saskatoon area, Saskatchewan, Canada; Can. J. of Earth Sciences, 5, 1167-1173. (https://seisweb.org/classes/GEOL487/2026/WWW/index.html) Christiansen, E.A. and E.Karl Sauer, 1998. Geotechnique of Saskatoon and Surrounding Area, Saskatchewan, Canada. In Urban

There is no final exam for this course

Field activities

On Monday August 24, the field work will be all day jointly with the Geological Engineering Field school. We will be working at Petursson's Ravine (at Fedoruk Rd and Central Avenue in Saskatoon). <https://maps.app.goo.gl/y2n6ahcTABkTTbjg7> Since this site is within the city, we will not be providing transportation. You will be expected to get there and back on your own. There are nearby bus routes and bicycle paths, and there is a public parking lot at the Prairie Crocus Trail. GEOE students will start setting up the first seismic line at 8 am., and GEOL487 students will be expected to arrive at 9 AM. You will have to undergo quick safety training and sign the safety forms before starting work at around 9:30 AM.

In the rest of the week August 24 - 31 (including the weekend), meet every day at 8 AM at the loading dock of the Geology Building. We will drive out to field locations near Bergheim and Aberdeen, Saskatchewan. Transportation will be provided on these days. We will be back at the loading dock around 5 PM every day.

Come each day prepared to be outside for the day. Bring appropriate rain gear and sun protection, a lunch, and plenty of water. Close-toed running shoes or hiking boots are recommended for footwear. Long pants are also recommended since we will be walking through grass and brush. Be prepared for ticks! For washroom facilities, we have a portable toilet set up in the seismic vault at the geophysics test site or in a tent when working in the field. When working in Saskatoon, we will need to travel back to the university or to other public washroom facilities.

Grading Scheme

<i>Evaluation component</i>	<i>Weighting</i>	<i>Due date</i>
Field participation and data quality	40%	August 31
Report	60%	December 1
Total	100%	

Descriptions of Evaluation Components

Field Participation and Data Quality: This mark will be assigned by the course instructors based on:

- 1) Attendance, level of engagement with the field work, collaboration with instructors and other students;
- 2) The care with which the data were acquired.

Report: We will schedule meetings at which instructors will present the results of analysis of the field results. Your report will be a summary of these results as well as a review of one geophysical

technique of your choosing. The maximum report length is 1500 words. Report can be completed and handed in anytime before the end of term 1.

Submitting Assignments

Submit the report to Profs. Butler or Morozov in-person or by email.

Late Assignments: Extensions on the due dates of the reports must be arranged in advance with the instructors.

Attendance Expectations

It is expected that students will make every possible effort to attend the field component of the course.

Participation

Participation in the field component of the course is critical. Course instructors will be observing the students and will arrive at a participation mark following the field component of the course.

Copyright

Course materials are provided to you based on your registration in a class, and the data and anything created by your professors and instructors is their intellectual property and cannot be shared without written permission. If materials are designated as open education resources (with a creative commons license, CC) you can share and/or use in alignment with the [CC license](#). This includes exams, PowerPoint/PDF slides and other course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see <http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>).

Before you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at <https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php>. For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder.

For more information about copyright, please visit <https://library.usask.ca/copyright/index.php> where there is information for students available at <https://library.usask.ca/copyright/students/rights.php>, or contact the University's Copyright Coordinator at <mailto:copyright.coordinator@usask.ca> or 306-966-8817.

Student Feedback

A SLEEQ evaluation of the course will be used to gather student feedback.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity (<https://academic-integrity.usask.ca/>). Academic misconduct is a serious matter and can result in grade penalties, suspension, and expulsion.

Prepare for Integrity

Students are expected to act with academic integrity.

- Students are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community (tutorial link: <https://libguides.usask.ca/AcademicIntegrityTutorial>) .
- Students can access campus resources that support development of study skills, time and stress management, and ethical writing practices important for maintaining academic integrity and avoiding academic misconduct.

Responses to Misconduct

Students are expected to be familiar with the academic misconduct regulations (<https://governance.usask.ca/student-conduct-appeals/academic-misconduct.php#About>).

- Definitions appear in Section II of the academic misconduct regulations.
- The academic misconduct regulations apply regardless of type of assessment or presence of supervision during assessment completion.
- Students are advised to ask for clarification as to the specific expectations and rules for assessments in all of their courses.
- Students are urged to avoid any behaviour that could result in suspicions of cheating, plagiarism, misrepresentation of facts. Students should note that posting copyrighted course materials (e.g., notes, questions, assignments or exams) to third party websites or services or other forum or media without permission is an academic or non-academic misconduct offense.

Non-academic offenses are dealt with under the Standard of Student Conduct in [NonAcademic Matters and Regulations and Procedures for Resolution of Complaints and Appeals](#).

Examinations with Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates. In order to access AES programs and supports, students must follow AES policy and procedures. For more information or advice, visit <https://students.usask.ca/health/centres/access-equity-services.php>, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES. For information on AES services for Fall 2021 please visit: <https://students.usask.ca/health/centres/access-equity-services.php#Fall2021Information>.

Student Supports

Academic Help for Students

The University Library offers a range of learning and academic support to assist Usask undergraduate and graduate students. For information on specific services, please see the Learning page on the Library web site <https://library.usask.ca/support/learning.php>.

Remote learning support information <https://students.usask.ca/remote-learning/index.php>

Class and study tips <https://students.usask.ca/remote-learning/class-and-study-tips.php>

Remote learning tutorial https://libguides.usask.ca/remote_learning

Study skills materials for online learning <https://libguides.usask.ca/studyskills>

A guide on netiquette, principles to guide respectful online learning interactions

<https://teaching.usask.ca/remote-teaching/netiquette.php>

Teaching, Learning and Student Experience

Teaching, Learning and Student Experience (TLSE) provides developmental and support services and programs to students and the university community. For more information, see the students' web site <http://students.usask.ca>.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (<https://students.usask.ca/student-central.php>).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, bringing Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (<https://www.facebook.com/aboriginalstudentscentre/>) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success and facilitates international education experiences at USask and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students in their transition to the University of Saskatchewan and to life in Canada. ISSAC offers advising and support on matters that affect international students and their families and on matters related to studying abroad as University of Saskatchewan students. Please visit students.usask.ca for more information.

Land Acknowledgement

We acknowledge that the Saskatoon campus of the University of Saskatchewan is on Treaty Six Territory and the Homeland of the Métis. We pay our respect to the First Nation and Métis ancestors of

this place and reaffirm our relationship with one another. We recognize that in the course of your studies you will spend time learning in other traditional territories and Métis homelands. We wish you safe, productive and respectful encounters in these places