AMBROSE
UNIVERSITY COLLEGE

GEO 109
Introduction to Geology

Number of credits: 3

Prerequisite:
None

Semester:	**Winter, 2015**
Days:	**Monday, 5:30 - 8:30 pm**
Room:	**A2133**
Lab – day:	**TBA (outdoor or laboratory)**
Lab–Room:	**A2151**

Instructor:	**Dr. Stephen Jeans**
Email:	**sjeans@ambrose.edu**
Phone:	**403-284-3630**
Office:	**L2078**
Office hours:	**By appointment (before/after class is best)**

Course Description:

A survey of modern geology, the composition and structure of the Earth -- surface and internal processes, rocks and minerals.

Further Course Information:

Introduction to Geology connects your understanding about Earth to the body of knowledge and fields of scientific study. Topics include: formation of Earth, internal and external structure and features; minerals and rock composition; controlling processes, breakdown, reformation, and redistribution of rock material; earthquakes, water, glaciation, fossils, and geologic time; and, awareness of the research, impacts, and issues of geologic forces and resources on Canada and around the world.

Previous post-secondary knowledge of the sciences (Biology, Chemistry, Physics, or Earth Sciences) and/or mathematics is unnecessary for success in this course.

Expected Learning Outcomes:

It is the aim of the course that students acquire the following knowledge and skills:

- an understanding of the significance and coexistence of science and of faith,
- a sense of the vast relative scale of geologic time and of the process of rock formation and change,
- knowledge of interior processes that drive Earth's dynamic crust and the implications for geological surface activity,

Important Dates:

First day of class:	January 12, 2015
Registration revision period:	January 18, 2015
Last day to request revised examination:	March 02, 2015
Last day to withdraw from course:	March 20, 2015
Last day to apply for time extension for coursework:	March 30, 2015
Last day of class:	March 30, 2015

Final Exam:	**April 13, 2015**
Time:	**5:30 PM – 8:30 PM**
Room:	**A2133**

Family Day
NO CLASS: February 16, 2015

Easter Monday
NO CLASS: April 06, 2015

- understanding of the body of research and thought leading to theory about geologic and other Earth processes,
- ability to observe surficial materials and formations, leading to testable inferences about type, origin, and internal structure,
- appreciation for the origins of physical matter and importance of the resources available for human consumption, and
- essential skills and practices to become a student of science and of geology.

DATES OF NOTE (subject to change)

Midterm Exam: February 23

Guest Speaker
Dr. Darren Sjogren: March 09

Saturday Field Study: March 28 (all day)

Outline:

Opportunities for outdoor laboratory work and guests may be included at the instructor's discretion, but classes are planned for the following order:

Part I -- Overview of Earth and Geology
- Being an Earth Scientist
- Geology and Belief
- Geologic Methods
- Dynamic and Essential Earth
- Plate Tectonics

Part II -- Earth Materials and Cycles
- Minerals, Igneous Rock and Volcanism
- Sedimentary Rock and Fossils
- Sedimentation and Stream Process
- Metamorphic Rock
- Earthquakes and Interior of the Earth

(for Final Exam purposes, second half of course:)

Part III -- Surficial Materials and Interpretation
- Deformation and Mountain Building
- Mass Movement
- Groundwater
- Oceans and Deserts
- Climate Change and Glaciation

Part IV -- Structural Geology and History
- Geologic Time and Events
- Stratigraphy and Geologic Dating
- Southern Alberta Events
- Brief History of Life
- Resources and Distribution

Requirements:

Assignments

Exit Journal (30%)

During the progress of most every lesson in this course, in-class assignments and/or an exit slip will be expected before a student leaves for the evening.

The content and marking of each day's work will depend on the type of assignment. However, exit slips will typically consist of two to five questions that can be answered in about 5 to 10 minutes.

Given the practical nature and hands-on investigations that are part of Geology 109, it is highly recommended that students build their own version of a geologist's field journal to use on our planned fieldtrip, of which the Exit Journal is a part. Some journal resources will be supplied in class, and others will be collected by the student for themselves and for sharing in class with their instructor and peers. The journal may be used by students on practical portions of Exams. As a result the journal is considered an open document between the student and instructor.

Field Study

A mandatory component of this course is a one-day Field Study trip to southern Alberta stops from Ambrose campus to the Badlands. Late in the term on a Saturday, students will travel together by bus and, during stops, apply much of their learning toward examining the geology of the prairies and on an educationally enriched tour of the Royal Tyrell Museum of Paleontology in Drumheller. Due to the latter being in a climate controlled facility, the Field Study will likely take place regardless of weather. Further details will be shared in class time.

The occasional class may include (weather permitting, e.g., no snow storm), moving outdoors on campus and/or within the Mahood Commons (Ambrose campus green space) for field work and laboratory experiments. Every attempt will be made to inform students about such opportunities before class begins. Watch for an email from your instructor and posting on Moodle for updates about possible outdoor activities about a day before class. It is the responsibility of the student to dress appropriately (mainly for frozen ground and cool air temperatures).

All field study/tutorial work is considered to be a portion of the Exit Journal mark.

Research and Report (20%)

Each student will conduct research and write a written report. Rock Classification examples will be given in class. Conducting standardized scientific tests on an unclassified rock specimen, researching further information about similar specimens, and classify the rock.

According to the instructions provided by the instructor for this assignment, and along with decisions reached by the class as a whole, a paper will be written that classifies and displays the rock for others to appreciate. Geologic procedures will be standardized in class for describing rocks in technical terms, along with an accompanying paper written in common terms to further describe each rock sample and the conditions of formation of that rock (the rock story).

With such a practical activity is important to strive for accuracy in correctly naming the rock sample, however, this assignment is marked more heavily on the conduct of geologic procedures, on citing and properly referencing sources of information, and on a concise, cleanly formatted and written document.

Cautions and Student Equipment

To reinforce concepts encountered during this course, participants will be asked to observe and/or take part in multiple demonstrations and laboratory work that will include the use of equipment. Safety is an expectation of each student for themselves, for the well-being of others in the class, and for the preservation of Ambrose facilities, apparatus, and sample materials.

When conducting work in the classroom or in the field students must be observant, use proper procedure, and check that others around you are not at risk. Report any concerns or incidents immediately to your instructor.

Should the need arise each student is required to own, and wear, their own protective attire including eye wear, or take appropriate precautions to avoid injury. For example, safety glasses are available in the bookstore and the need will be discussed in class. Additionally, there will be classes that require extensive hands-on work with 'messy' substances such as rock material, sand, clay, and water. Such messy classes will be announced at least a week before so that students can choose appropriate attire.

Submission of Assignments:

Exit slip and in-class assignments will typically be submitted in the most efficient format expected during class, and as they are completed. Arrangements for submission of the term assignment will be made based on the format to be submitted by the students and by the wishes of the instructor.

Attendance:

Class attendance is mandatory. Participation in class activities is mandatory. An excused absence, by informing the instructor in a timely manner, can be discussed regarding retention of grade points and/or suitable alternate arrangements made at the instructor's digression.

Evaluation:

Grading Schedule

Two exams will be given to the class, a mid-term exam (20% of the course grade) and a final exam (30% of course grade). The mid-term exam may consist of multiple choice questions, some fill-in-the-blank or diagram questions, and/or a practical component classifying rocks or other discipline task. Likewise, the final exam will consist of multiple choice questions and a possible practical component, but will address mostly new material (~90%) since the mid-term examination.

Exit slips and/or class assignments	30%
Mid-term written examination	20%
Research and Report assignment	20%
Final written examination	30%

Grade Summary:

The available letters for course grades are as follows for this course:

Letter grade	Cut-off value	Numeric equivalent	Description
A+	96	100	
A	91	95	Excellent
A-	86	90	
B+	82	85	
B	75	81	Good
B-	72	74	
C+	68	71	
C	63	67	Satisfactory
C-	60	62	
D+	56	59	
D	50	55	Minimal Pass
F		49	Failure

Included above is a scale which indicates how the percentages in this class will likely be translated to letter grades

based on the Ambrose grade translation table. Because of the nature of the Alpha 4.00 system, there can be no uniform College-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the outcome of assignments and the instructor's assessment of the level of each class, compared to similar courses and classes taught previously.

Please note that final grades will be available on the student registration system. Printed grade sheets are no longer mailed out.

Textbooks:

Students are required to obtain a reputable source of information to familiarize themselves with the concepts and topics encountered in each class. The required text for **Introduction to Geology** is available at a 10% discount negotiated by your instructor for this year; visit the Ambrose Bookstore for more information.

The textbook for this course is:

Wicander, Reed, and Monroe, James S., (2013). **GEOL^2: Student Edition**. Brooks/Cole: Belmont, CA.

In some cases, additional text sources will be supplied, and in other cases students will be given links to freely downloadable sources from vetted government and educational sites on the Internet. Discussion of suitable text sources will be conducted during the first class and an analysis of the vetted resources provided for dialogue.

Class Resources

Some general class resources for the course may be available online through the Ambrose Moodle site. Resources to be printed and brought to class will be posted and announced at least a week before. For help on how to access these files please see the computer helpdesk. Any individual component or resource will not be complete as a guide to leaning the material of the course; therefore, students are required to attend class for direction on building their own understanding and annotate materials with their own notes.

Policies:

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (Cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, it is highly recommended that they forward all messages from the Ambrose account to the other account.

During the **Registration Revision Period** students may to enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty. These courses will not appear on the student's transcript. Courses should be added or dropped on the student portal by the deadline date, please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a Request to Withdraw from a Course by the **Withdrawal Deadline**, please consult the List of Important Dates. Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. A grade of "W" will appear on the student's transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a **Revised Examination** Request form to the Registrar's Office by the deadline date, please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to engage in electronically-enabled activities unrelated to the class during a class session. Please turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Please do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins. *Please obtain permission before posting any electronic information or image about others as the classroom experiences are not intended for public release.*

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "**Course Extension**" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date, please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control".

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Students are strongly advised to retain this syllabus for their records.