EAS 100
Planet Earth
Section B2, Winter 2016

INSTRUCTORS: Dr. Jeffrey Kavanaugh (CCIS 3-009, 492-1740, jeff.kavanaugh@ualberta.ca)
Office hours: W 2:00-3:50 pm or by prior arrangement

Dr. Virginia Millan (CCIS 2-038, 492-7225, garciami@ualberta.ca)
Office hours: W 11:00am-12:50 pm or by prior arrangement

LAB COORDINATOR: David Chesterman (CCIS L1-272, 492-8494, david.chesterman@ualberta.ca)

CALENDAR DESCRIPTION: *3 (fi 6) (either term, 3-0-3). Introduction to the origin and evolution of the Earth and the solar system. Introduction to plate tectonics and the rock cycle. Simple energy balances and interactions between radiation and the atmosphere, oceans, ice masses, and the global hydrological cycle. Evolution of life, biogeography, and global climate in the context of geologic time. The carbon cycle. Human interactions with the Earth. Mineral and energy resources. Not available to students with credit in EAS 101, 102 or 201 or SCI 100 (Note: Students with credit in EAS 201 may take EAS 200).

COURSE OBJECTIVES: EAS 100 is a course about our planet, the Earth. The objective of the course is to show how the Earth functions as a dynamic system that is shaped by interactions between its geological, physical, chemical, and biological elements. Through lectures and laboratory exercises, the various components of the Earth system will be introduced including the geosphere (the solid Earth), the hydrosphere (water in its liquid, solid and vaporous states), the cryosphere (the frozen Earth), the atmosphere (the Earth’s gassy envelope) and the biosphere (living things). The evolution of these components through the Earth’s history will be discussed, as will interactions between these “spheres” and human impacts.
on the Earth system. This course thus provides a solid foundation for study in all branches of Earth science.

LECTURES: EAS 100, Section B2
           MWF, 10:00-10:50 pm, Tory Lecture Theatres, TL 11

LABS: EAS 100 Lab sections H01-H16. Each student must register for one lab section. You are expected to attend the lab section in which you are registered.

REQUIRED MATERIALS: Textbook: The Blue Planet, 3rd Edition
                     Skinner and Murck; bound ($175.95 new/$152.75 used), binder-ready ($130.08), or eBook ($62.50; available at the Bookstore’s Special Orders Desk)

                     Lab Kit: University Bookstore (~$23.70); EAS 100 Winter 2016 Edition is required.
                     Lab Manual: University Bookstore (~$18)

                     Additional materials: Notepaper, calculator, pens, pencils, eraser; a metric ruler, protractor, graph paper and tracing paper should be taken to labs.

COURSE WEBPAGE: Important course information, including the course syllabus, all lecture slides, and sample examination materials, will be posted on eClass. All posted material will be formatted in Adobe PDF; a free Adobe Acrobat reader is available at http://get.adobe.com/.

IMPORTANT DATES
January 04        Winter term classes begin
January 15        Last day to add, drop or change enrollment status
February 15       Provincial holiday; University buildings closed
February 16 – 19  Reading Week; classes withdrawn
February 22        Midterm exam
March 25          Good Friday; University buildings closed
March 28          Easter Monday; University buildings closed
April 8           Last day of classes
April 13 – 26    Final exams
April 21          EAS 100 Section B2 final exam (TO BE CONFIRMED)
APPROXIMATE LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Week of</th>
<th>LECTURE TOPICS</th>
<th>Chapters</th>
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<tbody>
<tr>
<td>Jan. 04</td>
<td><strong>Foundation of Earth Systems:</strong> Earth Science; Components of the integrated earth system; The Earth in space</td>
<td>1, 2, 4</td>
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<tr>
<td>Jan. 11</td>
<td><strong>Geosphere:</strong> Plate tectonics; Geologic time; Minerals and rocks; Rock cycle</td>
<td>3, 5–7</td>
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<td>Feb. 01</td>
<td><strong>Hydrosphere:</strong> The water planet (surface water, groundwater, and oceans)</td>
<td>8, 10</td>
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<tr>
<td>Feb. 15</td>
<td>Reading Week; No classes</td>
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<tr>
<td>Feb. 22</td>
<td>Midterm Examination</td>
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<tr>
<td>Feb. 24</td>
<td><strong>Atmosphere:</strong> Composition; Dynamics and circulation; Weather systems</td>
<td>11, 12</td>
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<td>Mar. 06</td>
<td><strong>Cryosphere:</strong> Glaciers and glaciation; Climate change</td>
<td>9, 13</td>
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<tr>
<td>Mar. 14</td>
<td><strong>Biosphere:</strong> Biology and geology; Elemental cycles; Organization of life in space and time; Biodiversity; Evolution.</td>
<td>14, 15</td>
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<td>Apr. 03</td>
<td><strong>Anthrosphere:</strong> Anthropogenic influences and resources</td>
<td>19</td>
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<tr>
<td>Apr. 21</td>
<td>EAS 100 Section A1 Final Examination <em>(to be confirmed)</em></td>
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LABORATORY EXERCISES

Practical work is a vitally important part of Earth Science: the laboratory exercises for this course are where you will learn to put the principles explained in the lectures into practice. Each lab section is assigned two teaching assistants (TAs), who will present the assignments at the beginning of each lab and will help you with the work. The teaching assistants are graduate students who have a range of expertise and experience in the Earth Sciences.

I strongly recommend reading through each lab in advance, as there are readings in the lab manual and questions that you are expected to have completed before your lab starts. If you have questions about the lab material, feel free to contact a TA.

Lab attendance is mandatory. If you miss a laboratory exercise for any reason, contact the Lab Coordinator to arrange a time to make up the work.

Please dress appropriately for weather during the first lab; proper clothing and footwear are important. If necessitated by weather, the order of the labs might be changed.
LABORATORY SCHEDULE
Lab dates will not change. Attendance at labs is mandatory and a participation mark will be allocated worth 10%. All lab assignments must be completed in the lab. There is a final lab exam, which will be administered in your lab section; all lab techniques are testable. You must attend your scheduled labs session.

For laboratory work in this course, the observations you record must be made individually by you. You must carry out all calculations yourself, and written answers must be in words composed uniquely by you. A copy of the ‘Don’t Cheat sheet’ is available online at http://www.governance.ualberta.ca/StudentAppeals/~/media/Governance/Documents/GO05/CAM/Dont%20Cheatsheet/Updated.pdf.

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<thead>
<tr>
<th>Week of</th>
<th>Lab Topic</th>
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<tbody>
<tr>
<td>Jan. 04</td>
<td>No labs this week</td>
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<tr>
<td>Jan. 11</td>
<td>No labs this week</td>
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<tr>
<td>Jan. 18</td>
<td>Maps and topographic profiles</td>
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<td>Jan. 25</td>
<td>Earth materials: minerals and rocks</td>
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<td>Feb. 01</td>
<td>Mapping geologic history</td>
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<td>Feb. 08</td>
<td>Plate tectonics</td>
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<tr>
<td>Feb. 15</td>
<td>No labs this week</td>
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<td>Feb. 22</td>
<td>Water at and beneath the Earth’s surface</td>
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<td>Feb. 29</td>
<td>Glaciers and glaciations</td>
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<td>Mar. 07</td>
<td>Solar radiation, atmosphere and oceans</td>
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<td>Mar. 14</td>
<td>The life and times of planet Earth</td>
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<td>Mar. 21</td>
<td>Human footprint and resources</td>
</tr>
<tr>
<td>Mar. 28</td>
<td>Optional Field Trip: N. Saskatchewan River Valley</td>
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<tr>
<td>Apr. 04</td>
<td>Lab Final Exam</td>
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COURSE MARKS AND EXAMS

MARK DISTRIBUTION:
- Midterm examination 20%
- Laboratory Participation 10%
- Lab Final Exam 20%
- Lecture Final examination 50%

EVALUATION:
Individual components of the course will be given a numerical score. A cumulative course mark will be calculated from these scores, weighted as tabulated above. A final letter grade will be assigned based upon your cumulative mark and my analysis of the class’s cumulative mark distribution. Where possible, natural breaks in the cumulative mark distribution will be used in assigning grades, but no pre-determined distribution of grades will be imposed on
the class. Your grade will reflect a combination of your absolute achievement and relative standing in the class. In past years, the mean grade in this course has generally been in the B-to B range. The mean grade this year will be based on my judgment of the overall caliber of this class relative to past cohorts.

Please be aware that a total score of 50% or more in the course as a whole does not necessarily ensure a passing grade, if said score exceeds 50% only by virtue of the lab component. In cases where the exam scores indicate an inability to master the course content to any significant degree, the student will be assigned a failing grade. A failing grade may also result for any student whose final exam score is less than 50%, or under other circumstances that indicate that a passing grade is inappropriate. Grades are unofficial until approved by the Department and/or Faculty offering the course.

MIDTERM EXAMINATION: Monday, February 22, 10:00–10:50 pm
FINAL EXAMINATION: Thursday, April 21, 9:00–11:00 am*

* It is the student’s responsibility to confirm the date, time and location of the Final Exam once this information is posted on BearTracks.

REPRESENTATIVE EVALUATIVE MATERIALS:
Representative evaluative materials, including sample questions and examination format details, will be posted on the course website at least two weeks prior to the midterm and final examinations.

DEFERRED MIDTERM EXAM:
A student who cannot write a midterm examination because of an incapacitating illness, severe domestic affliction or other compelling reasons can apply for a deferred midterm examination. Applications are to be made in writing to the professor within 48 hours of the missed exam or assignment due date. Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the Code of Student Behaviour. Students who are granted permission to sit a deferred mid-term exam must do so on Wednesday, March 02, 2016, from 11:00–11:50 am; room TBA.

MISSED LABORATORY EXERCISES; DEFERRED LABORATORY FINAL EXAM:
You must notify the lecture instructor, the lab TA and the lab coordinator of a missed lab within 48 hours for the lab absence to be excused; all reasonable attempts must be made to make up any missed labs. Any lab assignments not completed and submitted will be assigned a mark of 0. Missing even one lab will affect your final grade.

If you miss the Final Laboratory Exam, you must notify both the lecture instructor and the lab coordinator within 48 hours. Students who are granted a deferred lab final exam must sit the exam before 4:00 pm on April 8, 2016. Arrangements to write the lab final must be made with the lab coordinator.
DEFERRED FINAL EXAM:
A student who cannot write the final examination due to incapacitating illness, severe
domestic affliction or other compelling reasons can apply for a deferred final examination.
Such an application must be made to the student’s Faculty office within 48 hours of the
missed examination and must be supported by a Statutory Declaration (in lieu of a medical
statement form) or other appropriate documentation (Calendar section 23.5.6). Deferred
examinations are a privilege and not a right; there is no guarantee that a deferred
examination will be granted. Misrepresentation of Facts to gain a deferred examination is a
serious breach of the Code of Student Behaviour. Students who are granted permission to write a
deferred final exam must do so on **Saturday, May 07, 2016, from 10:00–12:00; room TBA.**

REEXAMINATION:
A student who writes the final examination and fails the course may apply for reexamination.
Reexaminations are rarely granted in the Faculty of Science. These exams are governed by
University (Calendar section 23.5.5) and Faculty of Science Regulations (Calendar section
182.5.9). Misrepresentation of Facts to gain a reexamination is a serious breach of the Code of
Student Behaviour.

STUDENT RESPONSIBILITIES

ACADEMIC INTEGRITY:
The University of Alberta is committed to the highest standards of academic integrity and
honesty. Students are expected to be familiar with these standards regarding academic
honesty and to uphold the policies of the University in this respect. Students are particularly
urged to familiarize themselves with the provisions of the Code of Student Behaviour
(http://www.governance.ualberta.ca/CodesofConductandResidenceCommunityStandards/
CodeofStudentBehaviour.aspx) and avoid any behaviour that could potentially result in
suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an
offence. Academic dishonesty is a serious offence and can result in suspension or expulsion
from the University.

All forms of dishonesty are unacceptable at the University. Any offense will be reported to
the Senior Associate Dean of Science, who will determine the disciplinary action to be taken.
Cheating, plagiarism and misrepresentation of facts are serious offenses. Anyone who
engages in these practices will receive, at minimum, a grade of zero for the exam or paper in
question and no opportunity will be given to replace the grade or redistribute the weights. As
well, in the Faculty of Science the sanction for cheating on any examination will include a
disciplinary failing grade (no exceptions), and senior students should expect a period of
suspension or expulsion from the University of Alberta.

Laboratory classes provide an environment in which discussion and communication are
encouraged. However, the work you pass in for marking must be entirely your own. This
means that written answers must be composed in your own words, not copied. Calculations
must be carried out by you, either longhand or on your own calculator, not copied from
someone else. Drawings and diagrams must be constructed directly by you from the information and materials provided; using someone else's work will be treated as a violation of the code of student behaviour and penalized accordingly.

EXAMINATIONS:
Your student photo I.D. is required at exams to verify your identity. Students will not be allowed to begin an examination after it has been in progress for 30 minutes. Students must remain in the exam room until at least 30 minutes has elapsed. Electronic equipment cannot be brought into examination rooms – this includes calculators, cellular phones, music, video and video game players, etc. If you must wear a pager, please notify the instructor. Use of headphones is forbidden during exams, and hats should not be worn.

CELL PHONES:
Cell phones are to be turned off during lectures and labs, and are forbidden during exams.

RECORDING OF LECTURES:
Recording is permitted only with prior written consent of the instructor or if recording is part of an approved accommodation plan.

STUDENT ACCESSIBILITY SERVICES
Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are advised to discuss their needs with Student Accessibility Services (http://www.ssds.ualberta.ca/; 1-80 Students’ Union Building; 780-492-3381 (phone) or 780-492-7269 (TTY).

STUDENT SUCCESS CENTRE
Students who require additional help in developing strategies for better time management, study skills or examination skills should contact the Student Success Centre (http://www.studentsuccess.ualberta.ca/; 2-300 Students’ Union Building; 780-492-2682).

COURSE OUTLINE POLICY
The University of Alberta policy on course outlines can be found in Section 23.4(2) of the University Calendar. Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.

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