EAPS 10000 001 (EAPS 100) *Planet Earth*

Fall 2015 (CRN 17524) – TTh 1:30 - 2:45 p.m. – EE 129

Professor L. Braile

Department of Earth, Atmospheric, and Planetary Sciences, HAMP (CIVL)
Room 2271; braile@purdue.edu (please use this email address; note only one “l” in braile)
Office Hours:  TTh 2:50 – 3:30 p.m. (most days)

EAPS 100 Home Page: [http://web.ics.purdue.edu/~braile/eas100/eas100home.htm](http://web.ics.purdue.edu/~braile/eas100/eas100home.htm)

TAs: Ruth Arnoff, Office Hours: M, 10:00-11:00 a.m., Th, 3:00-4:00 p.m., HAMP 3263 : raronoff@purdue.edu;
Huan Fang, Office Hours: Tu 12:00-1:00 p.m., F 12:30-1:30 p.m.; HAMP 4169, fang63@purdue.edu;
Apurupa Gorthi, Office Hours: M 12:00-1:00 p.m., F 12:45-1:45 p.m.; HAMP 4171, agorthi@purdue.edu.

Secretary: Kathy Kincade - Room HAMP 2169-D, Phone: 494-5984

**NOTE: Please read this syllabus completely and carefully.** It answers many of the questions that commonly come up during the semester. You should also keep a copy of the syllabus handy to refer to during the semester. The syllabus/course outline is also available online (see EAPS 10000 course website listed above).

EAPS 10000 is an approved course in Purdue’s *Undergraduate Core Curriculum* in the Science, Technology and Society (STS) area ([http://www.purdue.edu/provost/initiatives/curriculum/index.html](http://www.purdue.edu/provost/initiatives/curriculum/index.html)).

**EDUCATIONAL OBJECTIVES:** The EAPS 100 course is designed primarily for non-science majors and provides a brief introduction to Planet Earth including the following geoscience subjects: Earth science (geology), oceanography, atmospheric science (meteorology), and astronomy. The coursework, assignments, and examinations emphasize developing a basic understanding of geoscience processes and concepts rather than memorization of terms, definitions and facts. Specific objectives of the course in three areas – content, skills and attitudes – are:

1) **Content objectives**
   - Develop an understanding and appreciation of the basic characteristics, history, and processes of Planet Earth; the realization that we interact with these aspects of the Earth system every day; and the importance to the future of Earth science related issues such as energy, natural hazards and the environment.
   - Enhance understanding of the interconnection between various Earth processes and topics.
   - Emphasize potential human effects on Earth processes and related environmental issues.
   - Recognize the interactions of Earth science and society in our increasingly technological world.
   - Consider the fundamental Earth science topics that are relevant to future teachers.

2) **Skill objectives**
   - Gain experience in problem solving associated with complex science issues.
   - Practice some analysis techniques that are useful in science, including graphing, map interpretation, visualizing three-dimensional features and understanding the concepts associated with scale – particularly for very large time periods or distances.

3) **Attitudinal objectives**
   - Enhance appreciation of modern scientific study.
   - Gain confidence in understanding and using scientific methods and information.
   - Recognize the relevance of Earth science and study of Planet Earth to our daily lives and our future.
   - Increase our appreciation of the Earth.

**TEXTBOOK:** *Foundations of Earth Science*, 7th Edition, Lutgens and Tarbuck, 2014 (be sure to get the 7th ed.; it is possible to use the 6th ed. – the content is almost all the same – but it takes some extra work). Additional information on textbook editions and options for purchase, e-text or rental, and obtaining the textbook can be found at: [http://web.ics.purdue.edu/~braile/eas100/Textbook.2014.pdf](http://web.ics.purdue.edu/~braile/eas100/Textbook.2014.pdf).

**REQUIREMENTS:**
1) Lecture
2) Reading Assignments (listed below)
3) Exams: (Exams are about 50 minutes long and cover material for about 5-6 weeks of the semester. Exams are short answer and multiple choice format. You will be able to bring a 3" x 5" “Study Card” (one card (!), both sides) or equivalent, with study information written on it, to the exams.)
   a. Midterm 6th week (~20% of grade; material in class through ~9/29/2015)
   b. Midterm 12th week (~20%; material in class from Exam I through ~11/5/2015)
   c. Final Finals week (~20%; material in class from Exam II through end of semester)
4) Quizzes or in-class activities/assignments, 8-10 unannounced (10 minutes) (~10-15%)
   [Quizzes may consist of traditional question and answer quizzes; in-class activities or “learning
    quizzes” with a written component; or brief response questions associated with a videotape.]
5) Homework (6-7 assignments) (~25-30%) (Late homework is accepted but must be turned in by the last day
    of class. Some points will be deducted for late homework. Homework assignments 1-3 turned in after
    week 13 will be subject to a 25% deduction. Be sure to check your grades on BB Learn.)

ATTENDANCE: Although no record of attendance in class is taken, your regular attendance is expected,
and because the most important course material is discussed in lecture, your learning will be enhanced by regular
attendance. Furthermore, there is good evidence that regular attendance will improve your grade in the course.
Therefore, your attendance is strongly encouraged. To encourage attendance and keep up-to-date with course
information, provide practice for exams, and stress important material, occasional quizzes (or in-class activities)
will be given in lecture. If you miss a quiz (or in-class activity), you will not be able to make it up. However,
two quiz grades will be deleted at the end of the semester, and, except for people with poor attendance and thus a
low quiz total, the quiz scores will only have a significant impact on your grade in borderline situations. If you
have an extended absence, such as for a hospital stay or other serious problem, please see one of us to discuss. If
you miss class, please obtain the notes from another student in the class. There are also some outlines and
some of the PowerPoint slides available at: http://web.ics.purdue.edu/~braile/eas100/outlines.pdf. Although
PowerPoint slides are available, we strongly encourage you to take notes so that you can write down the topics
and main points covered each day in class (be sure to include a date for each day of the notes). The notes will
help you in your study for exams by reminding you of the topics covered and emphasized (time spent on a
topic) so that you can effectively study the slides and the textbook material to prepare for exams.

Note that the EAPS 100 class is scheduled for two 75-minute time periods per week (Tuesday and Thursday, 1:30 -
2:45PM). The advantages of this schedule are: 1) No Monday or Friday classes; 2) meet only twice each week; 3)
an extended class time (75 minutes) for exams or other activities requiring more than 50 minutes. The
disadvantages are: 1) The possibility of “losing concentration” during the last part of the class time; 2) the fact that
if you miss a class, you miss a larger amount of material.

GRADING: Grades for the course will be assigned from the total of points from the exams, and quiz/homework
categories. Grading will be on an "adjustable curve", not on a straight scale (>89 = A, 80-89 = B, 70-79 = C, etc.),
or a fixed curve (top 10% of the class = A, next 20% = B, next 40% = C, etc.). In past years, most students have
done reasonably well in this course and about 40-50% of the class receives an A or B grade. After each exam, we
will provide a grade range and approximate letter grade equivalent table as a indication of how well you did on
the exam. However, the actual exam grades are the point totals which are summed at the end of the semester. As you
know, averages can lead to somewhat unexpected results - two low B grades and a low C may end up as a C for an
average grade, or two high C grades and a high B grade may have a numerical total yielding a B grade. When
grades are assigned at the end of the semester, we check individual totals in borderline cases to look for a high
quiz/homework grade (good attendance and performing all assigned work) and for improvement in test grades (one
poor test score at the beginning may be due to difficulty in adjusting to the style of the test and should be able to be
overcome). Grade boundaries may then be adjusted slightly.

To estimate your grade at any time in the semester, add up the points earned on graded assignments, and the
possible points on those assignments; then calculate a percentage. You can use the straight scale (see above)
to estimate your grade. For example, after the first exam, if your grades are: Qz 1 (10/10), Qz 2 (7/10), Hw 1
(24/30), Ex I (85/100), the total points are 126/150 which is 84%, so the estimated grade would be a B. However,
the actual grade scale (curve) at the end of the semester is usually a little “easier” than the straight scale, and we
also use the +/- system for the final letter grade, so the 84% might be a B or a B+. Of course, the grade estimates
calculated fairly early in the semester may not produce very good estimates of your final grade. Also, remember
that at the end of the semester, we drop each student’s lowest two quiz grades. There are usually 8 quizzes, so the
maximum number of quiz points is usually 60 for the semester.
(Grades will be available on Blackboard Learn (https://mycourses.purdue.edu/). You can link to BB Learn from the EAS 100 web page: http://web.ics.purdue.edu/~braile/eas100/eas100home.htm. You can also link to the EAPS 100 web page from Prof. Braile’s home page: http://web.ics.purdue.edu/~braile/. If you think that you have a problem with your grades, please see me before the last day of class.

### SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Topic</th>
<th>Assigned Reading Pages (Textbook)</th>
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<tbody>
<tr>
<td>1.</td>
<td>Aug. 25 - Tu</td>
<td><strong>INTRODUCTION</strong> - Course Content, Scientific Method</td>
<td>2-21</td>
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<tr>
<td></td>
<td>Aug. 27 - Th</td>
<td>Metric, Why geoscience?</td>
<td>2-21</td>
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<td>2.</td>
<td>Sept. 1 - Tu</td>
<td>Powers of Ten, Scale, Graphs and Maps, Models</td>
<td>2-21</td>
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<td></td>
<td>Sept. 3 - Th</td>
<td>Forces and Energy</td>
<td>367-369</td>
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<td>3.</td>
<td>Sept. 8 - Tu</td>
<td>Geologic Time</td>
<td>271-293</td>
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<td></td>
<td>Sept. 10 - Th</td>
<td>Uniformity vs. Catastrophism, Earth Processes</td>
<td>119-135, 272-278</td>
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<td>4.</td>
<td>Sept. 15 - Tu</td>
<td><strong>EARTH SCIENCES</strong> - Interior of the Earth</td>
<td>208-210</td>
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<td></td>
<td>Sept. 17 - Th</td>
<td>Chemistry of the Earth</td>
<td>23-75</td>
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<td>5.</td>
<td>Sept. 22 - Tu</td>
<td>Plate Tectonics I</td>
<td>151-187, 207-229</td>
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<td></td>
<td>Sept. 24 - Th</td>
<td>Plate Tectonics II</td>
<td>151-187, 207-229</td>
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<td>6.</td>
<td>Sept. 29 - Tu</td>
<td>Geological Hazards, Earthquakes I</td>
<td>189-206</td>
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<td></td>
<td>Oct. 1 - Th</td>
<td><em><strong>EXAM I</strong></em></td>
<td>-</td>
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<td>7.</td>
<td>Oct. 6 - Tu</td>
<td>Geological Hazards, Earthquakes II</td>
<td>189-206</td>
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<td></td>
<td>Oct. 8 - Th</td>
<td>Geological Hazards, Volcanoes</td>
<td>231-269</td>
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<td>8.</td>
<td>Oct. 13 - Tu</td>
<td><strong>No class – October Break</strong></td>
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<td></td>
<td>Oct. 15 - Th</td>
<td>Hawaiian Volcanoes, Mt. St. Helens</td>
<td>231-269</td>
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<td></td>
<td>Oct. 22 - Th</td>
<td>Waters of the Ocean, Ocean Currents</td>
<td>99-117, 321-351</td>
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<td></td>
<td>Oct. 29 - Th</td>
<td>Marine Biology</td>
<td>-</td>
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<td>11.</td>
<td>Nov. 3 - Tu</td>
<td>Ocean Pollution, Oil Spills</td>
<td>353-362</td>
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<td>Nov. 5 - Th</td>
<td><strong>ATMOSPHERIC SCI.</strong> – Intro., Structure of Atmos.</td>
<td>353-362</td>
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<td>12.</td>
<td>Nov. 10 - Tu</td>
<td>Circulation of the Atmosphere</td>
<td>421-441, 443-456</td>
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<td></td>
<td>Nov. 12 - Th</td>
<td><em><strong>EXAM II</strong></em></td>
<td>-</td>
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<td>13.</td>
<td>Nov. 17 - Tu</td>
<td>Weather Forecasting</td>
<td>421-441, 443-456</td>
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<td>Nov. 19 - Th</td>
<td>Climate</td>
<td>135-145, 371-385</td>
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<td>Nov. 26 - Th</td>
<td><em><strong>Thanksgiving Break</strong></em></td>
<td>-</td>
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<td></td>
<td>Dec. 3 - Th</td>
<td><strong>ASTRONOMY</strong> - Introduction, Astronomical Distances</td>
<td>518-537, 543-545</td>
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<td>16.</td>
<td>Dec. 8 - Tu</td>
<td>Solar System</td>
<td>473-513</td>
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<td></td>
<td>Dec. 10 - Th</td>
<td>Stellar Évolution, Galaxies</td>
<td>518-537, 543-545 (App. D)</td>
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<td>17.</td>
<td>Dec. 14-19</td>
<td><em><strong>FINALS WEEK - EXAM III</strong></em></td>
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CAMPUS EMERGENCY INFORMATION: In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor’s control. Information will be posted on the course website as soon as possible. University closing updates and emergency information will be posted on Purdue’s home page – you can sign up for emergency text alerts. Text message sign-up procedures (and other emergency information) can be found on the Emergency Preparedness website at [http://www.purdue.edu/emergency_preparedness/](http://www.purdue.edu/emergency_preparedness/). Also, see emergency Quick Reference Guide ([http://www.itap.purdue.edu/tlt/faculty/QuickRefGuide.pdf](http://www.itap.purdue.edu/tlt/faculty/QuickRefGuide.pdf)) and additional information on pages 4-6 of this document. For more information, an Emergency Procedures Handbook is available at [http://www.purdue.edu/fire/safety_handbook.pdf](http://www.purdue.edu/fire/safety_handbook.pdf).

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**QUICK REFERENCE GUIDE**

**FOR ANY EMERGENCY:**

**CALL 911**

**WHAT TO DO...**

**EVACUATION PROCEDURES—FIRE**

- Activate the alarm
- When fire alarm is activated, evacuation is mandatory
- Call for help—dial 911
- Warn others
- Evacuate in accordance with the Building Emergency Plan or at the nearest exit
- Evacuate immediately—if possible take your belongings
- Evacuate to an area that does not impede responders
- Assist persons with disabilities, if possible
- DO NOT USE ELEVATORS
- Do not re-enter the building until authorized by Public Safety officials

**SHELTER IN PLACE—ACTIVE SHOOTER**

- If advised to shelter for an active shooter incident, immediately seek shelter in nearest facility
- If advised to shelter for an active shooter incident, immediately seek shelter in nearest facility
- If possible, secure yourself and others inside a room
- Do not leave your area until authorized by Public Safety officials

How you will be notified...

**Purdue ALERT** (Our emergency warning notification system)

- All-Hazards Emergency Warning sirens: (Shelter In Place)
- Fire alarms: (Evacuate the building)
- Email: An e-mail will be sent to all people with a purdue.edu address
- Text messaging: Purdue University faculty, staff and students may sign up via the Purdue website to receive an emergency notification text message
- Purdue home page: The home page (www.purdue.edu) is the focal point for all campus-related emergencies
- Residence Life: University Residences have procedures for alerting people in individual halls via their resident assistants, phones, and signage
- Local Media: The University works with the news media, radio, TV, newspapers, and Internet, to help spread the word
- Facebook: Individuals can sign up for a Facebook account ([www.facebook.com](http://www.facebook.com)) and join the Emergency Notification Group
- Boiler TV: The Boiler Television Emergency Alerting System may also broadcast emergency information

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Classroom Emergency Preparedness
Attachment for Class Syllabus

EMERGENCY NOTIFICATION PROCEDURES:

☐ Dial 911 from any public or campus telephone.

☐ Over 250 Emergency Telephone System (ETS)
  ☐ For assistance push the ETS button which will connect you to the Purdue Police Department

☐ Immediate warning notifications focuses on two basic concepts:
  ☐ Fire Alarms mean to immediately evacuate the building and proceed to your Emergency Assembly Area (should be specified in the Building Emergency Plan).
  ☐ All Hazards Outdoor Emergency Warning Sirens means to immediately seek shelter (Shelter In Place) in a safe location within closest facility/building.

☐ “Shelter in place” means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, earthquake, release of hazardous materials in the outside air, or a civil disturbance. When you hear the sirens immediately go inside a building to a safe location and use all communication means available to find out more details about the emergency. Remain in place until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

(In both cases, you should seek additional clarifying information by all means possible...Purdue Home page, email alert, TV, radio, etc...review the Purdue Emergency Warning Notification System multi-communication layers at http://www.purdue.edu/emergency_preparedness/warning_system.htm)

EMERGENCY RESPONSE PROCEDURES:

☐ Purdue’s Emergency Procedures Guide should be periodically reviewed and referenced for all emergencies. Located at: https://www.purdue.edu/emergency_preparedness/flipchart/index.html

☐ Be familiar with the Building Emergency Plan (each building is required to have a BEP) for:
  ☐ evacuation routes, exit points, and location to report for roll call after evacuating the building.
  ☐ when and how to evacuate the building.
  ☐ shelter in place procedures and locations
  ☐ additional building specific procedures and requirements.
Understand the University’s emergency warning notification system...Purdue ALERT http://www.purdue.edu/emergency_preparedness/warning_system.htm

EMERGENCY PREPAREDNESS AWARENESS VIDEOS

"Shots Fired on Campus: When Lightning Strikes," is a 20-minute active shooter awareness video that illustrates what to look for and how to prepare and react to this type of incident. See: http://www.purdue.edu/securePurdue/news/2010/emergency-preparedness-shots-fired-on-campus-video.cfm (Link is also located on the EP website)

“To Hell and Back, College Fire Survival” is a 20-minute fire safety video. You must register to view the video. However, the People’s Burn Foundation will not send you e-mail or spam, and your information will not be shared with third parties. The People’s Burn Foundation collects demographic information to study cultural, age and gender awareness pertaining to fire and burn prevention. The video can be seen at: http://www.igot2kno.org/login.aspx?ReturnUrl=%2fcollege_fire_survival.aspx

MORE INFORMATION

Reference the Emergency Preparedness web site for additional information: http://www.purdue.edu/emergency_preparedness/index.htm