An Unusual COIL Collaboration: What Do Geology and IT have in Common?

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COIL LATIN AMERICA ACADEMY

Specialty: Geology
Course: Geology and the Environment

Specialty: Information Technology
Course: Mobile App Development
THE COLLABORATIVE PREMISE

Science and technology are examples of subjects sometimes instructed as an individual silo of knowledge.
• Students will gain a sense of appreciation for the complex relation and connections between science, society and technology.
• There will not be any technology-related issues.
• The group will be able to develop a tool useful for society.
• We will continue to collaborate.
NIGHTMARES

- Students will not participate.
- There will be serious lack of communication.
- Students will not see the importance of such collaboration.
LEARNING OUTCOMES

- At the end of the collaboration, students will be able to:
  - Demonstrate the concept of responsible citizenship by creating a mobile app to create awareness of a particular environmental issue related to their communities.
  - Discuss cultural influences on scientific and technological advances.
  - Describe the importance of multidisciplinary work.
  - Assess how IT and science can help solve issues in a wide-range of areas.
  - Analyze the importance and usefulness of distance collaborations for professional development, not only for academic purpose.
REALITY CHECK

PLAN A
PLAN B
PLAN C
IT CHALLENGE

- TEC APPROACH: Urban DataFest, smart cities, solve a problem in your community using Information Technology.

- OUR APPROACH: How can Mobile Technology help before/during/after and earthquake or volcano eruption?
M1 Icebreaker Discussion: Getting to Know Each Other (week 1–2)

Over time we will all share information, insights, opinions and experiences about the course topics. During this first discussion, you will get to know each other a bit.

Therefore, you should create a short “About Me” video (3–5 minutes max.) that should include the following:

- **About you:** Where are you from? Do you have a job/family/hobbies? Are you pursuing a degree, or just taking a few classes? Why did you choose this course?
- **About your area/location:** Use part of your presentation to identify an environmental issue related to your area and why this problem is important to you. Do you believe technology might help minimize or solve this matter?
- **About your culture:** Because during this term we will be looking at the connection between science, society and technology, how would you describe the culture around environmental issues in your area? What about technology? For example, millions of people are affected by flooding around the globe every year, however, many communities do not want flood zone warning signs in their backyards. On the other hand, the use of technology such as smartphones has become a way of life for many of us. How would you describe your community’s stand on environmental issues and technology?

Please use these questions as guidelines for your presentation. You don’t have to answer all of the question but your video should cover all three areas (you, location, culture).

After you have posted your video, watch what others have posted. What do you think about the environmental issues others in the class mentioned? Did you know about these issues? How do these issues impact you, if at all? What can you say about the environmental issues raised and the possible ways technology can help minimizing them? What questions have you identified that would help you to better understand the interaction between society, technology and society?

Each of you should, **in addition to your original comment, enter a minimum of three additional responses/comments** to posts by others in the class. Please note that this will be a standard requirement for all discussion forums.

**IMPORTANT:** Please contact the instructor as soon as possible if you don’t have video recording capabilities (e.g. phone, computer camera), and/or you would prefer not to post a video, and/or if you are having trouble uploading the video. Equally important, accommodations will be provided for those with disabilities that will hinder full participation in this activity. Make sure that you read the [How to Share/Post Your Video and Other Large Files](#) before attempting to upload video directly into the forum.

Grading for this assignment will be based on the following rubric: [Discussion Rubric](#)
The purpose of this assignment is to allow you to search the web for websites and/or mobile applications that help us as citizens to learn more about our actions and how they affect the environment where we live.

More and more, we turn to the web and/or smartphones when looking for information. The ability to have easy access to a huge array of information is something that has become ubiquitous to many of us. This is a positive development, as we are equipped with the ability to learn about practically anything, anytime! But with all the information out there, we also need to think about how to evaluate these sources. Is the source reliable? Does the author have an ulterior motive? Is the information up to date?

It is also important to distinguish the type of materials and information available. Is it factual or is it an interpretation? Neither is necessarily "better" than the other, but as a critical reader, you need to be able to distinguish between different types of information and aids to track our environmental footprint.

Your job is to find two websites and two mobile applications that relate to earth science or the environment in some way that helps you develop an environmental conscience about your daily choices.

Please submit a summary of your findings utilizing the following questions (make sure that you answer the questions for both websites and apps separately):

**Websites**

- What is the URL and title of the website?
- Who is the author of each of the websites? Not the webmaster. The author will be either a person or an organization, or both.
- What is the general idea, theme or purpose of the website?
- Find one item on the web page that you think is the most useful and least useful for citizens looking to track their environmental footprint and learning more about the environment.
- What features do you think could improve the site?
- Is the site mobile friendly and/or include tools accessible through mobile devices?

**Mobile Apps**

- What is the name of the mobile application? What platform does it serve (e.g., iOS, android)?
- Who is the developer of each of the apps? A person or an organization, or both?
- What is the general idea, theme or purpose of the app?
- Find one item on the app that you think is the most useful and least useful for citizens looking to track their environmental footprint and learning more about the environment.
- What features do you think could improve the app?
- Is this app related to a website or is it a standalone app?
Goal: to help students understand that scientific and technological advances do not occur in isolation but rather within a cultural context driven by what society needs.
Part II. Proposal for Mobile App Prototype (Feb. 19)

- Each team will share a summary of their proposed prototype in the designated discussion space.
- The group needs to create a short proposal (minimum of 150 words) of the group’s mobile app prototype explaining the main purpose and aspects of the prototype.
- The proposal should include:
  - Team name and members (please identify who are the science and technology leaders);
  - Geologic hazards to be covered with the prototype (earthquakes or volcanic eruptions?);
  - Main purpose of the proposed mobile app;
  - Expected outcomes from citizens using the app (e.g., how exactly the citizens will benefit from using the app?); and,
  - An explanation of how the app will help create a smart city.

Part III. Development of Mobile App Prototype (Feb. 19–21)

- Tec. de Monterrey’s students will develop a prototype for the mobile apps according to the recommendations from each team.

Part IV. Presentation of Mobile App Prototype (Feb. 22–25)

- Each team will submit a brief presentation of the prototype, with emphasis on how it will serve the smart city and the citizens.

Part V. Vote for Best Prototype (Feb. 26 – Mar. 1)

- Everyone will vote, using an anonymous survey tool, for the best app prototype.
PARTICIPANTS IN CHALLENGE

- OVERALL: 14 teams
- COIL: 5 teams
- One of our teams won the challenge: Volcano Prevent
WHY DID THEY WON?

Most teams focused on:
- Solving local problems
- Solve too many problems

Our Teams
- Discuss problem with students from another institution
- Think outside their community
- Focus on one problem
LESSONS LEARNED

- Dream big but be flexible!
- Problem solving: Focus on one
- Don’t make assumptions.
- Understand your technology (levels and limits).
- Make sure students on both sides understand what you are doing and why.
- Revisit your goals and expected learning outcomes often.
- Create learning activities that are meaningful to students.
- Plan for assessment and a “closing” experience.
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What’s Next?
MUCHAS GRACIAS!

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