



Small TLEF Project – Final Report

*To be completed for Small Projects upon completion of the project.
Please limit this report to a maximum of 2 pages.*

Project Title: Observing the Earth from Space	Report Submission Date: 2016/07/24
Principal Investigator: Nicholas Coops	Project Initiation Date: 2015/04/01
Report Submitted By: Nicholas Coops	Project Completion Date: 2016/03/31

Summary of Work Accomplished

Describe if and how the project has significantly contributed to the enhancement of teaching and learning, as well as if and how the project outcomes constitute sustainable benefits to students.

Three key online education resources were developed: a content portal, interactive online labs and a class blog/student portfolio. These resources were developed within Connect, and were primarily accessed by students enrolled in Cons 127, a new course for the Winter 2016 term. The Cons 127 Connect site is the content portal, and hosts lecture materials (including recordings of lectures), seven lab exercises for students, web links relevant to course themes and content, as well as a class blog where students critically engage with course material and each other. In future, relevant parts of this content will be made available for use in two other UBC courses (FRST 443 and Cons 340) as well as at least 5 non-UBC courses, which are part of the Faculty of Forestry 2+2 program.

Learning has been enhanced by providing students with a multi-media approach to learning, accommodating many learning styles (visual, aural, written, etc.). The use of web-based materials and free software, such as Google Earth provide students a foundational introduction to geospatial concepts and methods while being low-cost and accessible from anywhere the students have internet. These online resources support and enhance comprehension of complex concepts such as optical physics, orbits, triangulation, and image processing. The course blog has stimulated class discussion and has provided students a platform to share their ideas and interact with each other as well as teaching staff. This relatively informal platform has allowed students to express ideas easily in their own words while building a sense of community in the class.

Teaching has been enhanced through the utilization of multi-media tools, such as the audio-visual recording of lectures for student review. These tools can now be easily utilized in other courses. The use of Connect as a course platform also creates a central, web-based portal for course materials accessible by all teaching staff. The ability to mark assignments and track grades on Connect also helps to reduce the administrative burden on teaching staff, allowing them to focus more on enhancing student learning.

Sustainable benefits to students have been achieved in two ways. First, by using online resources and free software, the students have been shown geospatial tools that they can access easily outside the classroom. Tools like Google Earth are increasingly used by everyone from the casual user to GIS and remote sensing professionals, so an understanding of their functionality will help provide a foundation of



lifelong geospatial literacy. Second, by creating content that can be used in multiple classes, a diverse group of students will benefit from the course content developed so far.

Evaluation of Project Outcomes

Describe the outcome-based criteria used to evaluate the project's success or performance.

Pilot-testing of online materials was conducted in the summer of 2015. An evaluation panel of students was established to go over and assess newly developed lecture and lab material. All course material was modified and adapted as need based on graduate advisory committee feedback.

The course was held for the first time in Jan 2016. The program garnered very positive undergraduate student experiences (as measured by student feedback) using standard course evaluations.

These include:

From the class of 2015:

" ... is by far the most knowledgeable and interesting prof I've taken a class with in my first year. His slides are absolutely intriguing and the content is extremely comprehensive, concise and well put together. The visuals (Pictures, animations, videos) used in slides are amazing. "

" He was very engaged and was good at lecturing rather than reading the notes on slides (as some profs tend to do). I liked the way the course was laid out and he presented the matter very effectively."

"He really made the course and inspired me to learn more about it. Coops is one of the most entertaining teachers in class and as you study for the tests you realize not only is he fun but you've actually learned a ton on the subject as well."

"A stellar instructor with clear knowledge of and passion for the subject"

The course has also been approved as a "UBC Arts Science Requirement" for Arts students which will help overall enrollment.