Offering Advanced Software Training for Secondary School Students

HI-TEC 2021 Virtual Conference
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ELAC’s NSF ATE Goals!

1. Support TEST TAKERS to become LICENSED Land Surveyors
2. Offer RELEVANT courses in Land Surveying
3. INCREASE the number of land surveyors joining the workforce
OBJECTIVE(S)

• Pre COVID
  • Deliver 4 Land Surveying and Computed Aided Design (CAD) Bash Events at Secondary School Institutions (1 of 7 objectives from original proposal)

• During COVID
  • Deliver ONLINE computer aided design workshops with hands on skills set activities in land surveying
Planning Activities

- Recruitment & Marketing
- Admissions Processing and Enrollment Follow Ups
- Access to Software and Hardware
Recruitment and Marketing

- ELAC teamed up with x4 Secondary Partners
  - Roosevelt High School
  - Marc and Eva STERN MASS High School
  - Oscar De La Hoya Animo High School
  - Ellen Animo Ochoa Middle School
- Outcomes
  - Roosevelt High School was MIA
  - Added Animo Compton MS & HS
    - In the process of building up their charter school
Admissions Processes and Enrollment Follow Ups

- Admission support lasted only two weeks after class began
  - NSF ATE required hiring an adjunct to complete enrollment process
  - Complete enrollment process was completed after semester ended
    - This was required to release student stipends
- Enrollment follow ups was slow
  - Not enough human resources to follow up with students’ paperwork during enrollment
  - Required personal information including attendance
    - Attendance was a bit messy given that students were not enrolled yet so there was a lot of google form sign ups taking place
Access to Software and Hardware

• Software accessibility
  • Requires a laptop with good memory capacity
  • Was FREE but students were required to register for Bentley products
  • For some student, the software was already installed on laptop loaners
    • Software had some hiccups during program execution

• Hardware
  • Laptops were borrowed
  • Some students already had laptops and or desktops at home
The COURSE

- Was offered through an independent study course
  - No budget (hours from department) required
  - Faculty not PAID
  - Online via ZOOM
  - Met for about 2.5 hours
  - Taught by industry supporters, Archway Systems
    - Learning outcomes:
      - Learn CAD via Microstation Bentley
      - Learn Context Capture via Bentley
      - Learn Concept Station via Bentley
      - Learn LumenRT via Bentley
Field Activities

• Hand Sketch
  • To Scale of building footprint
  • Economics to budget for home
• Statistical Analysis
  • Pace rate determination
  • Standard deviation analysis
Lessons Learned

• Admissions processing SUPPORT is critical
  • Must last at least through out the semester
  • Required lots of coordination to QC students enrolled to obtain personal information
  • Is a MUST if you want to pass out stipends for students with a school ID

• TECH support for troubleshooting is a MUST
  • Complete prior to course commencement
  • Check software in the office to make sure it launches successfully
  • Try to launch software from the cloud

• Students can see the CONNECTION
  • Requires a good instructor to keep the connection and engaging energy during zoom lectures
  • Field tasks helped students make the connection
  • Some students wanted to see a follow up
Student Testimonies

• Sherlyn Jaimes
  • These homework assignment were pretty easy, only because my friend, Franklin Gonzalez was helping me and explaining what I had to do and how I could do it, so special thanks to him, the field component was interesting but not very much to my linking
Student Testimonies

- Brenda Nava
  - The homework was challenging and fun at the same time; I learned a lot. I did enjoy the field component
Student Testimonies

• Bryan Mundia
  • I thought that they were easy but enjoyable and relevant to the course itself
Student Testimonies

• Diego Burgara
  • The homework was a little hard especially for someone that has never had any experience in this field. With the help from my parents, we were able to work together and learn a lot.
Student Testimonies

• Mike Smith
  • The homework was easy. Yes, I did enjoy the field component, it was nice to get outside.
Student Testimonies

• Eric Cyphers
  • Eric was quoted as stating “he always enjoys” Field Work!
Student Testimonies

• Sean Martinez
  • The homework assignments were very easy and straightforward. Thank you for creating a stress-free atmosphere to learn these softwares and their applications. The field components were enjoyable. I’m in the viticulture industry using mapping and imagery to help winegrowers to make informed decisions. I am most interested in precision mapping with multispectral imagery, but it’s amazing to see what can be done with other tools and programs.