Cuesta College GIS Certificate Program Advisory Council
Meeting Minutes
August 14, 2018

Advisory Committee Members present: Feride Schroeder, David Yun, Hannah Panno, Desiree Dier, Camilla Karanmanlis, Dave McCue

Members absent: Larry Harlan, Dario Moreno, Ann Kitajima, James Strampe, Russ White, Jessica Boone, Jennifer Taylor, Jonathan Bodamer, Bobby Jo Close, Mark Herbst, Russ White, Dan Lambert

Agenda items:
1. Status of new classes and Certificate Program
    a. GEOL 225 Introduction to GIS is being offering Fall 2018 as a hybrid course and Spring 2019 as a fully online course
    b. Starting Fall 2019, pending course approval, we will offer all courses as 9-week courses
    c. GEOL 225 and GEOL 226 Advanced GIS will be offered in Fall 2019
    d. GEOL 225, Web Applications, Remote Sensing and Data Acquisition and Management will be offered in Spring 2020.
    e. Students can earn Certificate of Achievement by Spring 2020.

Meeting notes:

Feride Schroeder reviewed the new classes and Certificate Program. To summarize, Cuesta College has received a 3-year $225,000 grant to help meet local workforce needs in geospatial technology, or GIS. Cuesta would provide project-based and work-based experience to motivate more students to enroll in specialized GIS courses that will lead to higher rates of completion for the certificate. The program will appeal to students who seek to add GIS skills to a degree such as engineering, architecture, geology, health, agriculture, or computer information systems. The certificate will also reach those in the workforce who need to learn GIS skills in order to pursue a new job or advance in a career. There is a strong focus to ensure that underrepresented student populations are served by this program.

All members of the advisory committee, both present and absent, expressed support for this program. This was reiterated by the committee members present at this meeting. The most important comments were that it was advantageous to have the courses as 9 week courses, not full semester length (17 weeks). There was also consensus that the certificate program should be a one-year program. Students can take the courses at any pace, but they can complete it in one year if they want. Most also agreed that it would be better to offer the courses as hybrid courses, not fully online. Hybrid courses have the lecture portion online and the lab meets in person. The lab is three hours per week for the introductory and advanced GIS courses and will be 2 hours a week for the other three courses. The courses will likely be taught in both formats. The introductory GIS course will be offered as hybrid in the fall and fully online in the spring semesters. The sequence is listed below. Even though five courses are available, only four are required. You can see that GEOL 225, 226 and 227 are the required core courses, and students can choose between GEOL 228 or GEOL 230 as their elective.

I also discussed future courses that are being planned. The two courses that might be ready by Fall 2020 will be Programming for GIS and a Cartography short course.

Fall 2019   First 9 weeks   GEOL 225 Introduction to GIS
                 Second 9 weeks GEOL 226 Advanced GIS
                 Second 9 weeks GEOL 227 Web Applications
Spring 2020   First 9 weeks GEOL 225 Introduction to GIS
                 First 9 weeks GEOL 230 Remote Sensing
                 Second 9 weeks GEOL 228 Data Acquisition and Management
                 Second 9 weeks GEOL 227 Web Applications (maybe)

Core courses: GEOL 225, GEOL 226, GEOL 227 Web Applications
Choose 1 elective: GEOL 230 Remote Sensing or GEOL 228 Data Acquisition and Management

2. Curriculum
   See attached sheets for outlines and GTCM worksheets
   a. GEOL 225
   b. GEOL 226
   c. GEOL 227 Web Applications
   d. GEOL 230 Remote Sensing
   e. GEOL 228 Data Acquisition and Management

Meeting notes:
Feride Schroeder met with one member and discussed the GTCM. The GTCM is very helpful to ensure that core competencies and skills are included in the courses. A good way to approach this may be to identify areas that are most important, even if you can't comment on each competency. I mentioned that I would set up time to meet with each agency or person individually to go over the GTCM.   I am currently writing the curriculum for GEOL 227, 228 and 230, so input for those classes could be implemented in the foundation of the course.

3. Internships
   Beginning July 2019, we will have students that have completed one semester of GIS.
   a. When is the best time to offer internships?
   b. Can you describe typical activities/task for interns? Does it depend on their skill level?

Meeting notes:
Members of the council stated that summer internships, semester long internships and yearlong internships were desirable. It would be determined by the organization's needs. Some agencies like CAL FIRE prefer long term interns. We have funding to offer four paid internships per year. The students will be paid $16/hours for a total of 150 hours per internship. The internship funding begins July 1, 2019. I will be sending out a questionnaire in January about the internships. The internships will be a work experience course for the students, so that the employer has complete control over the content of the work. I hope to be involved on an advisory level by meeting with the employer and students over the course of the semester. This purpose of this is so that I can learn more about the needs of the local workforce. We will also complete an employer survey during and after employment per the requirements of our grant.

4. GISP Certification
    a. Is this something that adds value?
    b. Are local employers looking to certify their employees?

Meeting notes:
Most advisory committee members present stated that GISP certification would not be required but it would definitely improve the job candidate's qualifications. We will be paying for ten students who complete the certificate program to take the GISCI Geospatial Technical Core Knowledge Exam. If you are not familiar with this certification, there is more information on the GISCI website: https://www.gisci.org/ . They can then accumulate the experience to eventually earn their certification. If a student is already a GIS professional, they would be able to apply for full certification if they have the experience required (4 years). Overall, the group agreed that it was not something that employers required or looked for when reviewing applicants.

Additional meeting notes:

In addition to the topics listed above, we also discussed software and future courses for the program.
Software: A quick verbal survey showed that most employers at the meeting and in this area use ESRI products. Some organizations do most of their work in ArcGIS Desktop and one organization is already using ArcGIS Pro. The organization using ArcGIS Pro prefers the cartography tools in ArcGIS Pro because most of their work is done creating maps. In addition to ArcGIS Pro, it was noted that Adobe Map Publisher is often used to produce maps. This will assist me in developing appropriate exercises that gives students opportunities exposure to the different types of software for performing tasks. ESRI plans to support ArcGIS Desktop for at least ten more years, so the transition to ArcGIS Pro is not urgent. I will however be teaching ArcGIS Pro to supplement exercises in ArcMap. As the students progress to the more advanced classes, they will have more exposure to ArcGIS Pro. I will continue to communicate with the various agencies to identify alternate and open source software used by the different agencies. Please contact me if there is a particular software competency that you think is important the students to learn. As of now, they students will learn ArcGIS Desktop (ArcMap and ArcCatalog mostly) in the introductory class; there will be some exposure to GRASS, QGIS, ArcGIS Pro and ArcScene. In the advanced spatial analysis class they will do more advanced and independent work of the concepts from the introductory course but also exercises using Network and 3D Analyst. I will be investigating software such as Avenza Maps, Terrain Navigator Pro, Fulcrum and Adobe Map Publisher. I hope to bring awareness of different types of geospatial software to the students, even if we are not doing hands on exercises. It is my hope that students in the advanced courses will be able to navigate these on their own. Again, please send me the names of any software or app that you use and think would be important for the students to learn about.
Future courses: I have a very strong interest in adding drone technology to the program. I am currently doing training to get certified in drone piloting and incorporating drone imagery in my courses. All people present were interested in this course. I am going to meet with faculty from Engineering and Engineering Technology where we will discuss a joint venture to develop a drone program here.

Another course that is at the top of the list for development is a Python programming for GIS course. In addition the following courses are also under consideration: Cartographic Principles and Field Data Collection (GPS/GNSS) in GIS.

Thank you to all that participated. My primary mode of communication until the next formal meeting will be through email and surveys. I will be contacting those that expressed interest to arrange one on one meetings to discuss the GTCM. I hope to have another meeting in mid-2019.

Members of Advisory Committee:

Organization	Contact Job	Title
County of San Luis Obispo	Desiree Dier	GIS Manager
City of San Luis Obispo	David Yun	GIS Manager
CAL Fire	Hannah Panno	GIS Research Analyst II
City of Arroyo Grande	Camilla Karamanlis	GIS Technician
Regional Water Quality Control Board	Larry Harlan	Environmental Scientist
Caltrans	Dario Moreno	GIS Coordinator
Morro Bay National Estuary Program	Ann Kitajima	Assistant Director
County of SLO Public Works	Jennifer Taylor	GIS Analyst II
County of SLO	Jonathan Bodamer	GIS Analyst
TENERA Environment	James Strampe	GIS Specialist, Biologist
County of SLO	Bobby Jo Close	Sr. GIS Analyst
County of San Luis Obispo Assessor	Mark Herbst	Senior GIS Analyst
Cal Poly	Russ White	Data and GIS Specialist
Althouse and Meade, Inc	Jessica Boone	GIS Analyst
City of Paso Robles	Dave McCue	Information Technology Manager
City of Paso Robles	Dan Lambert	GIS Analyst