Minutes

Committee Name: Merced College Drone Certificates Advisory Committee

Date: July 14, 2020

Time: 4:30 pm

Location: Zoom Meeting

Attendees: There were 15 people in attendance, according to zoom and zoom will not tell me who they are, so here is the attendees I remember:

Kathy Kanemoto, Merced College, Coordinator and Professor of CS, ran the meeting

Brandon Stark, UC Merced, Director of the UC Center of Excellence on Unmanned Aircraft System Safety

Erin Hestir, UC Merced, Associate Professor, Environmental Engineering

Leili Afsah-Hejri, UC Merced, Specialist at University of California

YangQuan Chen, UC Merced, Professor, Mechanical Engineering

Reza Ehsani, UC Merced, Professor, Mechanical Engineering

Melanie Martin, Stanislaus State, Professor, Computer Science

Megan Thomas, Stanislaus State, Professor and Co-Chair, Computer Science

Chris Bley, Co-Founder and Principal at Monterey Bay DART

Curt Nelson, Certis USA Regional Manager-Central San Joaquin Valley of California

Michael Kalua, UC Merced, Assistant Specialist, ViceLab, Department of Civil and Environmental Engineering

Mike Bonillas, Merced College, Drone Tech Co-Instructor, Gavilan College Drone Instructor, and Owner of Brilliant Perspectives LLC

Richard Ornellas, Merced College, Professor of Mechanized Agricultural

Jim Yager, Fresno State and Impact Marketing Enterprises, Inc, Agricultural Expert

1. **Introductions**
   Meeting called to order at 4:30 pm by Kathy Kanemoto.

   Kathy explained the purpose of advisories is to receive feedback from members regarding the 2 Drone Certificates; Drone Technology and Drone Media.

2. **About Merced College and the CS Department**
   Used an informational graphic to show the CS pathways that we are creating at Merced College through the Computer Science department.

   > *A little background on Merced College and the CS department:*
   > *https://app.lucidchart.com/invitations/accept/51164491-4109-4fd6-a499-82e516eda35f*

   > *We also have websites that highlight some of the things we are doing to create Computational Science pathways for our students:*

   > *https://cspathways.us/*

   > *http://stem4me.com/*

   > *https://cspathways.us/news/*

3. **Our CS Program Learning Outcomes**
   Went through the CS Program Learning Outcomes and how they relate to the Drone Certificates.
   > *A. Increase Enrollment*
   > *B. Continue to Grow our Student Success Number*
   > *C. Get Students Internships and Jobs in the CS Industry*
   > *D. Have more students graduate with a degree or certificate*
   > *E. Up our Hispanic and Female Computer Science graduates and enrollment and success in our classes.*
   > *F. Create more pathways for our Drone Technology classes. Including an Ag and Photography Path.*
   > *G. Create and implement the ICT transfer AS-T degree.*
   > *H. Make more of our classes online, and up the success rate in these classes.*

4. **Our relationship with Alliances like CAHSI**
   We are a member of CAHSI; Computing Alliance of Hispanic Serving Institutions, which provides a network of other CS instructors that assists with broadening participation in CS, our biggest goal, https://cahsi.utep.edu/

5. **Went over the reasons we are making a Drone Technology Certificate**
   There are no prerequisites to the beginning drone classes and these are meant to attract students with different interests other than Computer Science. The classes are meant to expose students to project based learning centered around drones and utilizing Computational Science to solve problems. Thereby, the Drone Technology pathways are also designed to give students an intro to using Computational Science and can lead the students down a Computational Science pathway such as Computer Science, Engineering, or Information Communication Technology. Jobs in these sectors are also varied and in high demand. If the student does not

choose to get these degrees, the student still benefits in lifelong learning and understanding computers.

Here is an informational graphic on this Computational Science pathway:
https://app.lucidchart.com/invitations/accept/141e0993-3550-4343-bec7-38caae29d8b4

6. **Overview of the Drone Technology Certificate**
Went over the classes and curriculum that are a part of the Drone Technology Certificate.

Here is a graphic showing the classes required for the Certificate:
https://cspathways.us/dronecs.html#dronepathways

Here is a link to the Course Outlines of Record (CORs) for the classes:
https://drive.google.com/drive/folders/161s7yrx1eIexe30VMo4p8WNsGnaSDR14?usp=sharing

Here is a link to a project done in the Drone-17 class that we went over:
https://drive.google.com/drive/folders/1a7f5v3RMyKpFfPwvTmze_1hBDJ9KRqbE?usp=sharing

Here is a link to a video of projects created in the Drone-18 class that we went over:
https://www.youtube.com/watch?v=PZZpCdFMLrw&feature=youtu.be

7. **Drone Technology Certificate Program Learning Outcomes (PLOs)**
Went over how the Certificate's goals and objectives are meant to meet this growing need for a Drone Technology skilled workforce. In getting a Drone Technology Certificate a student will acquire computational science, electrical engineering, drone technology, math and science skills. We went through the PLOs for the class.

Here are the Drone Technology Certificate Program Learning Outcomes (PLOs):

A. *Ability to build, control, repair, and fly a drone safely and effectively and within the bounds of federal regulations.*
B. *Acquire knowledge to pass the FAA's Aeronautical Knowledge Test and acquire a Remote Pilot Certificate.*
C. *Collect different types of data using drones and analyze this data to make intelligent conclusions.*
D. *Construct programs using different programming languages and tools that effectively analyze the data collected by the drones.*

8. **Overview of the Drone Media Certificate**
Went over the classes and curriculum that are a part of the Drone Media Certificate.

Here is a graphic showing the classes required for the Certificate:
https://cspathways.us/dronecs.html#dronepathways

Here is a link to the Course Outlines of Record (CORs) for the classes:
https://drive.google.com/drive/folders/161s7yrx1eIexe30VMo4p8WNsGnaSDR14?usp=sharing

9. **Drone Media Certificate Program Learning Outcomes (PLOs)**
   Went over the Drone Media Certificate and the PLOs for the class; how the students will learn how to use drone technology to collect images and video to market and sell, use this media for inspections and in construction organization, and to make better business decisions.

   Here are the Drone Media Certificate Program Learning Outcomes (PLOs):

   A. *The Rules and Regulations governing sUAS set forth by the Federal Aviation Administration (FAA) and are able to pass the Remote Pilot Aeronautical Knowledge Exam and get their Remote Pilot Certificate with an sUAS rating.*
   B. *How to use computational science, basic electronics skills, and drone technology to solve real world problems.*
   C. *How to collect photographs, video, and data with the use of drone technology and use that data to assist in making better decisions in the utilization of resources or to sell a product.*

10. **Went through other educational Drone programs, degrees and certificates offered**
    Went over the need to have out drone program and certificates in our community and how no other Drone Technology Programs are at a Community College in the Central Valley.

    Here is a link made by Wing Cheung of Palomar College which has an esri map showing Drone Training programs in the US:
    https://www.arcgis.com/home/webmap/viewer.html?webmap=21387330c0284bd6a9b9e0cadd0535f5&extent=-133.2933,21.2536,-68.3861,51.0173

11. **Went through why students would get a Drone Certificate**
    Went through some of the reasons students would want to get the Drone Certificates and benefits of the Certificate, as well as asking for suggestions
    Some benefits to the student who gets a Drone Certificate receives:
    ● *preparation for other Computational Science classes, and research.*
    ● *lifelong learning and training to enter the workforce in a Drone Technology field.*
    ● *learns how to manage drones safely, the FAA rules and regulations that govern drones, and how to pass the Aeronautical Knowledge Exam for sUAS.*
    ● *how to fly different types of drones, and how to choose a drone to do what you want to do.*
    ● *how to manage, repair, and maintain drones and computer equipment.*
    ● *basic programming and use of GIS and drone software.*
    ● *soft skills and how to work in a research group.*
    ● *how to choose the correct technology to solve a problem, and how to solve that problem.*
    In the future:
    ● *The drone classes can transfer as an upper level elective?*
    ● *Can be used to...*

12. **Opened up meeting for participant comments and suggestions**
    Asked all of the participants their thoughts, suggestions, critiques and approval of the Certificates

13. Adjournment
Meeting adjourned at 5:35 pm by Kathy Kanemoto

14. Voted on approving the Drone Technology and Drone Media Certificates
Kathy asked Board Members if they agree with creating the Drone Technology and Drone Media
Certificates at Merced College, The drone curriculum as presented was voted on and approved

    i.   Melanie Martin motioned to approve the Drone Certificates

    ii.   Curt Nelson seconded

    iii.   Motion approved

Meeting Chair: Kathy Kanemoto

Recorder: Zoom

Here is the recorded Zoom meeting link:
https://cccconfer.zoom.us/rec/share/hy8td2Ql5bp7K7CZ0fxuLUT87MEiRH6wmHH2EXgK5avJOm0Ftq B3MjwAR23Lbfsp.0eWJk7GFQGaWIBsP

Here is a link to the slides that were used for the presentation during the meeting:
https://docs.google.com/presentation/d/1RHZUW5bWpM5Ly1qXtvphFspu7GBY2aKzRryOqg8Uzgc/edit ?usp=sharing