

Program Advisory Board June 28th Meeting Summary

Attendees: Charles Farmer, Chad Easterling, George Hill, Ryan Long, Rachel Coughanour, Nathan Robertson, David Brown, Rachel O'Sullivan, Katia Mayfield, Adam Lewis, Brady Rimes, Dave Fitzsimmons, and Nick Argrawal

The meeting started off with some new introductions. We have had two new industry partners to join us, Charles Farmer from Kratos and George Hill from Morgan County. We have also had a change with some of our student representatives. Ryan is joining us as a representative of the Math and Computer Science club, he is a math major with a minor in computer science. Rachel is joining us as an Information Technology student representative, and Nathan is joining us as a Computer Science student representative and also Math and Computer Science Club representative. Nick is the department's most recent faculty hire and will officially start with us on August 16th.

David Brown and Rachel O'Sullivan joined our meeting to discuss the Math and Computer Science endowed scholarship. At this moment in time, the MACS scholarship needs \$1500 for it to reach the minimum required amount for an endowed scholarship. Currently at the moment MACS only obtains funds towards the scholarship through the student's volunteer to work with a food vendor during the TN Valley Fiddlers Convention. By establishing the scholarship donations can be accepted to go directly towards the scholarship funding. These donations can be made by companies and individuals. The shocking part to this conversation is that at this moment in time the Foundation ONLY has a single scholarship that is funded by a donor that is geared specifically towards Computer Science students. Once the minimum value is obtained to establish the scholarship the MACS club will be able to assist students when it comes to their academics, attending events such as Hackathons and different competitions, and also assist them in the opportunity to attend conferences.

If anyone is interested in making a donation they can contact David at david.brown@athens.edu.

There was a brief discussion about ABET associated to both the CS and the ITE programs. At the time of the meeting the department was in the process of finalizing an Interim Report in associated to the CS program, this report only addresses the weaknesses that the evaluator had previously identified during their visit. These included the departments continuous improvement process, the number of faculty members that the department has, and the wording that is used for the student outcomes.

The department was also in the process of finalizing the self-study report to be submitted for initial accreditation of the ITE program. Both the self-study report and the interim report have been attached to this email for your review.

An accreditation visit will take place on September 29th – October 1st, 2019. The evaluating team would like to have a lunch on Monday September 30th and would be delighted if some of our board members would be able to join us.

All of you are cordially invited to the Evaluation lunch on September 30th. Lunch will take place from Noon to 1:30pm and the location will be on the Athens State campus (room to be determined). Please let me know if you will be able to attend.

During the meeting we also revisited the marketing strategy that the department has been using. At our last meeting we were asked who our “audience” was that we were targeting with our brochures. It was obvious that we were marketing to the transfer students. We took this conversation and chose to create materials that were more generalized and easy to provide to prospective students. The department created bookmarks which have “why study with us” facts on the front along QR codes that lead students to our websites. The back side of the bookmarks then have “to the point” sentences about each of the concentrations associated to the degree and also the upcoming Cybersecurity Certificate that the department is starting to offer beginning in the Fall 2019.

We also provided an update on the Computer Science Initiative that is taking place in the state. Professor Mayfield and Dr. Hester (from secondary education) have been staying up to date with this initiative and done some research to identify plans of action for the department once the specifications of what will be required is announced by the state. With this preliminary work Athens State hopes to be a trail blazer in this endeavor.

Exit exam results were reviewed with the Board to go over the success that the changes in requiring student to make a grade of 70 or above to be able to graduate were made. Results from AY 2015-2016 through 2018-2019 were reviewed. There was a question from a new member as to why some of the grades varied so much between some of the topics, specifically when it came to digital logic design and discrete math. The explanation provided is that those two classes are two that students will usually take within their first two semesters of starting the program and the exit exam is given in a student’s 6th – 7th semester (graduating time frame). Also, those two topics are those that are not emphasize or revisited in other courses that students have to take throughout their time. There was also once again a discussion about the structure of the exam. This was a discussion that was previously had where the plan is to change the structure to still cover the core courses (programming, data structure, discrete math, digital logic, and software engineering), and then have a portion of the exam that is specific to the degree in which the student is obtaining with a focus on their concentration. The new structure has not been implemented because further discussion needed to be had about how the scoring of this new section would impact what was already in place. The department wants to make sure that the students still focus on preparing for the exam instead of just treating it as a check mark that doesn’t count for anything. There were questions of should the full

exam count towards the 70% requirement for graduation, just the core section, or just the specific topic section. With feedback from the board it is determined that if there is not some type of requirement students will treat the topic section the way they used to treat the exam and our assessment would be skewed as it previously was. Board members are actually more interested in the way that the students score on the topic specific sections over the core sections of the exam. Dr. Rimes suggested that the grading be based on past sections of the exam versus the grade of the full exam, example require students to pass two sections out of four.

The conversation continued based on the assessment that was completed for the academic year of 2017-2018. During this time the assessment for computer science was made based on only students who were majoring in the Computer Science and Information Security concentration which was representative with 119 student while the Information Technology assessment was based on ITE student and also students found in the information systems and the networking concentrations which was representative of 106 students. The areas that were NOT MET were reported during the presentation at the meeting, however the number of students that were included in the assessment itself were not included, therefore they are found below:

Performance indicators NOT MEETING target (Computer Science Assessment)

Students that were in the CIS and CN concentration under the Computer Science program were used for the ITE assessment AND Computer Science. However, the Assessment Report also includes the results just based on the Computer Science and Information Security students, those are displayed below the original statements.

- Direct Measurements - 26 students were assessed in the direct measurements
 - 76% of students made 70 or higher on exit exam (target 90)
 - 83% of students made 70 or higher on the exit exam (CS & IS only)
 - 42% made 70 or higher on Digital Logic (target 75)
 - 57% made 70 or higher on Digital Logic (CS & IS only)
 - 69% made 70 or higher on Software Engineering (target 75)
 - 78% made 70 or higher on Software Engineering (CS & IS only)
- Indirect Measurements – graduates report strong or somewhat strong (target 80)
30 students completed the graduating senior survey for indirect measurements
 - 56.7% understanding and ability to apply mathematical reasoning.
 - 53% of CS & IS students only

- 58.6% regarding their written communication skills
 - 53% of CS & IS students only
- 66.7% regarding their oral communication skills
 - 60% of CS & IS students only
- 70% regarding their understanding and appreciation of ethical standards
 - 66% of CS & IS students only
- 60% regarding their understanding and appreciation of cultural, global, and human diversity
 - 53% of CS & IS students only

Performance indicators NOT MEETING target (Information Technology Assessment)

- Direct Measurements – 12 students were assessed in the direct measurements
 - 58% of students scored 70% or higher on exit exam (target 90)
 - 25% made 70 or higher on Digital Logic (target 75)
 - 58% made 70 or higher on Software Engineering (target 75)
- Indirect Measurements – graduates report strong or somewhat strong (target 80)
 15 students completed the graduating senior survey for indirect measurements (these students were made up of those who were in the CIS and CN concentration under the Computer Science program. At this time the ITE program had no ITE graduates)
 - 60% regarding understanding and ability to apply mathematical reasoning
 - 60% regarding their written communication skills
 - 73% regarding their oral communication skills
 - 73% regarding their understanding and appreciation of ethical standards
 - 67% regarding their understanding and appreciation of cultural, global, and human diversity

During the discussion on assessment we discussed the plan for the upcoming year. The Computing Accreditation Commission of ABET has specified six outcomes that each program is required to assess. These new outcomes were discussed and a question was raised about Security. In neither of the programs does CAC specify an outcome associated to Security. While this is not an outcome required by ABET the department

has entered into discussions to either establish our own outcome to measure knowledge on security or to create a program indicator that measures the students knowledge. The discussion of the new student outcomes rounded off our updates on ABET.

Next, Dr. Lewis led the meeting in discussions on the progress of the Center of Academic Excellence in Cybersecurity. This was something that we had discussed at our last meeting and we are moving forward once we finalize our ABET process for the year. Our new faculty hire, Nick, has experience from the Junior College perspective and will be assisting the department in this achievement. The Foundation has also dedicated specific funds that will be associated to online marketing based on a “click campaign” for the different programs that are associated to cyber security. We also introduced the new certificate that we will be offering starting in the Fall semester. The certificate is based on classes that students would take throughout their time with us, or if someone already has a Computer Science degree but would like to earn a cybersecurity certificate they would be able to do so.

Lastly, we wrapped up our meeting by introducing the three capstone projects that the students are working on this summer. Those are:

- Project 1: Fun with Lightboards (Sponsor: Dr. Lewis)
 - It's a piece of clear glass that's mounted between the camera and presenter that has a series of LED lights along the edges. The camera captures and records the video and it's then post-processed to reverse the image.
- Project 2: Pycrafty (Sponsors: Dr. Lewis and Huntsville Steamworks)
 - We are working with SteamWorks, a maker-space in Huntsville, who teaches Python programming to students aged 10-15 (among many other things).
 - Students are developing a programming game for teaching Python programming based on Minecraft.
- Project 3: A Repository for Storing and Searching Cyberattack Simulation Models (Sponsor: Prof. Mayfield)
 - Models have been created using mathematical formalism to represent an extension of Petri Nets.
 - Involves enhancing and improving a parser for this data plus building and automating the workflow for creating the models using in the simulation.

The students will be presenting their projects on July 25th at 6:00pm in Waters Hall room N202. We cordially invite all board members to join us for these presentations.