

## **Computer Science/Cybersecurity Advisory Board**

### **Meeting Minutes**

**February 26, 2019**

**Executive Board Rm–8-9:30 am**

#### **Attendees:**

**Dr. Lynn Lichtenberger**

**John Robinson**

**Janette Herbert**

**Dr. Christina Nase**

**Stephen Weissman**

**Anthony Haddad**

**Paul Ellenberg**

**Don Slomin**

**Dorothy Cohen**

**Carlos Morales**

**Victor Terenik**

**Shelly Dean**

Shelly Dean opened the meeting by welcoming everyone and introductions were made.

#### **Program Update**

Program Enrollment is a total of 78 students in the Computer Science and Networking areas for fall 2018. The actual breakdown is: 19 students computer science/information systems; 35 students computer science; 9 students networking; and 15 students networking/cybersecurity. It was noted that the new cybersecurity program started in the fall and a total of 14 students are enrolled. This increase will bring the program enrollment to 92 students for the fall 2018 semester.

#### **Computer Science Update**

- The state mandated that all degree programs need to be sixty credits or less. This decision will affect our degree programs in the following ways. For the Computer Science degree program, we removed one computer science four credit elective and added a one credit freshman seminar course. For the Computer Science/Information Systems degree program, we removed one business three credit elective and added a one credit freshman seminar course. It was noted that we may need to look at the course sequencing for year 1 spring semester since most of the computer science electives require CS 112 as a pre-requisite. For students who do not need to take CS 111 this will have no impact.
- State credit for the CS 101 general education course can range from zero to four credits. The recommendation is now two credits. However, we were unable to reduce the number of credits from three to two and still meet all of the state mandated learning outcomes. It was noted that Camden County College did make their CS 101 course two credits. It is now a total lecture course and students are taught Google Docs. At Rowan College at Gloucester County (RCGC) their equivalent CS 101 course is four credits and there are no plans to reduce the credits. Discussion arose on the following topics: Combining CS 101 and CS 102 to make a four credit course to match RCGC; increasing the overall content in CS 101 especially in excel; testing the students' knowledge of CS 101 content and if they test out, students should take the CS 102 course. It was noted that most high schools are using Google Docs but it is not equivalent to Microsoft Office. When students enter the workforce most jobs require Microsoft Office proficiency. Students in today's work environment need high level Excel and Access skills to do data analysis. The ability to use Word to accurately report results is also needed.
- We discussed our new two credit general education course. The course is called CS 110 Technology Literacy The course will focus on the ethical, social and security issues stemming from the use of computers in society. Internet browsing, researching and keyboarding skills will also be taught in this course. It was noted that depending on the degree program students will take either CS 110, CS 101 or both CS 101 and CS 110. Discussion arose as to the transferability of this course. It was noted that

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Rowan has a similar course but it is a three credit course. Discussion arose as to what skill set the student will achieve after taking the course. There was a general agreement that the skills that students get from CS 101 are more beneficial than the keyboarding and researching skills taught in CS 110.

- The state has a proposal to eliminate CS 101 as a general education course and infuse Word and PowerPoint into the English 101 courses. Two governing bodies in the computer science area have weighed in on this proposal. First, the NJ Community College Computer Consortium states that the K-12 technology standards serve as a foundation for technology competencies and not as a replacement. Second, the technology competencies are not directly aligned with English composition. Finally, demands for a technologically skilled workforce are increasing and not diminishing. And the Association for Computer Machinery (ACM) urgently requests reconsideration of this proposal and to keep the technological competency requirement as part of the general education foundation. At this point, the proposal is temporarily on hold and further examination is needed before any action is taken. Everyone at the meeting was in agreement that this proposal is not in the best interest of students.
- In the classroom, we are measuring the students' skill set in Microsoft Office before taking the CS 101 Introduction to Microcomputer course. Students are taking a baseline assessment test that contains thirty tasks which businesses and industries are looking for in their future employees. Cengage Learning will be analyzing the results. Preliminary analysis indicates that students are not doing well on the thirty tasks.
- For the fall 2018 semester we will be offering six traditional sections: two online sections and two hybrid sections of CS 101, and two traditional sections and six online sections of CS 110.

#### **Networking Update**

- Professor Anthony Haddad pointed out the new A.S. Cyber Security program will replace the current A.A.S. Networking/Cyber Security program. It was noted that current students will be allowed to either complete the Networking/Cyber Security program or transfer to the new Cyber Security program. The new A.S. Cyber Security program will align with Wilmington University bachelors program. It was suggested that Rowan University should also be included.
- Core courses in the new Cyber Security program include CS 212 C++ Programming, CS 241 Computer Forensics, and CS 265 Ethical Hacking. Professor Haddad stated that he wants to eliminate the CS 212 C++ Programming and add a Python programming course. He also stated that students will get experience through the use of virtual environments. A question arose as to whether students will get an understanding of the Linux operating system. He reviewed the complete list of courses and indicated that CS 229 Linux Operating system is a course that students will complete for the degree

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program. Another question was asked as to why CS 217 Networking Fundamentals is not part of the cyber security degree program. It was pointed out that general courses make up a large part of the degree and that students could get this experience either at a four-year institution or in the workplace.

- Professor Haddad stated that the new cybersecurity program is preparing students for the following certifications: Computer Hacking Forensic Investigator – CHFI certification, Microsoft certification 70:412: Configuring Advanced Windows Server 2012 Services, CompTIA Linux+ certification, CompTIA Security+, CompTIA CySA+ and Certified Ethical Hacker – CEH Certification.
- He also stated that students can participate in the National Cyber League Competition. Here students can complete different modules on such topics as open source intelligence, cryptography, scanning, log analysis, network traffic analysis, password cracking, wireless aces exploitation, web application exploitation and enumeration and exploitation.
- Salary for entry level Cyber Security Analysts ranges between \$56,026 to \$153,000 per year nationally. And Cybersecurity jobs on average offer a premium of about \$12,000 over the average for all computer jobs.
- Discussion arose over hardware and software. It was suggested that we look at adding a data analytics course. Dorothy Cohen point out there is Perkins money available to for hardware and software needs.