

**WEST CHESTER UNIVERSITY  
COMPUTER SCIENCE DEPARTMENT  
INDUSTRIAL ADVISORY COUNCIL (IAC)  
VIDEO CONFERENCE**

**MAY 1, 2019**

**SUMMARY**



**Dr. Fabrey** began the meeting by mentioning that our recent Hackathon was very successful! We hope to achieve even greater success next year when we host the annual meeting of PACISE (Pennsylvania

Association of Computer and Information Science Educators). In plain English, this is the group of all Computer Science departments within the Pennsylvania State System of Higher Education. We last hosted this event in 2010, and one of the usual activities is a programming contest. Next year, in April 2020, this contest will be our Hackathon! We expect to expand the number of Hackathon participants beyond local competitors to students within the state system!



Below are some of the topics involved in our meeting.

**New ABET Requirements (effective for students entering the major in Fall 2019 or later)**

- Science courses: the number of science courses (other than CSC) was lowered from 5 to 2

However, both of them must be lab courses required by some science major

- This leaves the student with a choice of 2 of 4: BIO110 (Biology), CHE103 (and CRL103 lab)(Chemistry), ESS101 (Geology), PHY130 (Physics)
- This will put enrollment pressure on these courses but reduce pressure on all other science courses (we have a big impact with approximately 400 majors – although the impact will be phased in during the next several years)
- Computer systems: We have developed a new course CSC231 (with this title), to replace the CSC242 (Computer Organization) requirement. Computer Systems includes topics in:
  - Computer Organization
  - Operating Systems
  - Networking
  - Parallel and distributed Systems

- The languages C and assembly language will still be involved
- Assessment changes:
  - PEO's (Program Educational Objects) remain the same
  - SLO's (Student Learning Outcomes) reduced from 15 to 6
    - We will only need to assess 6 SLO's – a more manageable number for us
      - We call them ABET-1 through ABET-6
    - We call the other 9 SLO's legacy SLO's and use their previous designations between (a) – (n). These will be listed in course syllabi. For ABET, these former SLO's are subsumed under the "Program Criteria" section of their accreditation

## **New Chart**

This chart is being reproduced in poster-size for mounting on the wall and will also be placed on our department website. It is intended to make our advisement more effective by identifying 4 areas within our curriculum:

- Software Engineering
- Data Analysis
- System & Networking
- Security

For each area, we list courses, tools, and typical career opportunities.

## **Enrollment Uncertainty**

We have a record number of majors – approximately 400. It is fortunate that we no longer require the internship of all majors! Our 300 and 400 level classes are filling to the maximum, with more frequent offerings required. On the other hand, our 100 and 200 level classes are going in the other direction – fewer sections and available seats in most of them! Perhaps, over time, this will mean that the total number of majors will level back down – perhaps to approximately 300?

## **Curriculum**

We discussed numerous possible modifications/enhancements to our program.

- B.S. Cyber Security
  - Would entering students have to apply for this or B.S. Computer Science?
    - If so, most first-year students would probably choose this!
  - Would we have a pre- program for the first two years?
  - Would we have one degree, but two tracks or concentrations?
- Data Science – minor, certificate, or concentration?
  - Would we collaboration w/math and/or business?
- In general, should we have tracks within B.S. Computer Science?
  - For example: Information Systems (business requirements included) & Computer Systems (the more technical track)

- We had this for many years between 1975-2000; the first track was the “easiest”, with enrollments outnumbering the other track by 2 to 1
- Only the second track would be eligible for ABET accreditation
- Math and Biology have many tracks
- Tracks could cross department lines
- Easier to seek approval than a new degree
- Possible discussion at the next IAC meeting...

## **ABET vs. NSA**

We always have a “tug-of-war” involving the requirements of these two organizations. We even have to have a coordinator for each of them: to make sure that we will be compliant with the requirements of each, with an approximately 5-year cycle of accreditation or certification.

## **Struggling with Hiring**

This year we searched for 2 new tenure-track professors but were unsuccessful. We brought 7 finalists to campus, made offers to 3, and were turned down by all of them.

- This difficulty with hiring is a national trend
- We discussed ways of encouraging our best students to pursue a career in teaching
- To complement this, we discussed ways to promote research in computer science
  - Collaboration with industry was discussed
  - The traditional “academic” way is to submit grant proposals, but this might not be enough, especially in terms of recruiting faculty
  - Linh Ngo shared with us the model at his former university (Clemson). To open and maintain a Research Data Center, internal seed money was allocated, followed by periodic NSF funding, supplemented by Clemson dollars. Could this approach work here?

## **New Course Topics?**

Various topics were suggested including Azure, Jupyter, R (with notebooks). Also, it should be noted that internship employer surveys as well as graduating senior exit surveys suggest that more coding classes, especially those for complex large-scale team projects, should be offered.

- We have, in fact, offered a class in R during the summer, and we are widening our list of complex large-scale systems courses to 5, with one of them being a topics course (with variable topic).

## **Use of LinkedIn, Facebook**

The use of social media for various purposes, including faculty hiring, was discussed. We already use Facebook for internship placement, but we could be doing more.

## Useful Websites

The following websites were posted in our Chat Window for the meeting:

- Dr. Burns' graduate Data Science course CSC576: <https://www.cs.wcupa.edu/rburns/DataMining/>
- NSF's SBIR (Small Business Innovative Research): <https://seedfund.nsf.gov/>

## Any Follow-Up?

If you have any suggestions or comments, please send to Dr. Fabrey at [jfabrey@wcupa.edu](mailto:jfabrey@wcupa.edu)

## For Example (from Art Freas, after the meeting)

Just some follow up from today.

### Ideas for research

Techniques and tools for bias detection in machine learning.  
Standard techniques for utilizing cloud based GPUs in AI/ML

### Course ideas

Combine statistics and CS in an intro to ML course focused on using Azure ML Studio, Data Bricks and Jupyter notebooks.

### Some links on how we recruit

<https://www.linkedin.com/feed/update/urn:li:activity:6529111013541969920>

<https://www.linkedin.com/feed/update/urn:li:activity:6527159786499383296>

### About Azure ML Studio and Azure Databricks

<https://azure.microsoft.com/en-us/services/machine-learning-studio/>

<https://azure.microsoft.com/en-us/services/databricks/>

### GPUs in Azure

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sizes-gpu>

**Ethics group I work with** (Mixed group of industry and academia)

<https://www.linkedin.com/in/peter-temes-1705882/>