

University of Texas at El Paso

Computer Science Department

Board of Advisors Meeting Minutes

November 17, 2017

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ABET Accreditation, Mission, PEOs, and SOs

1. How relevant are the newly defined BSCS PEOs to UTEP's mission?

The PEO to inclusion of national scope, interdisciplinary teams, and security are very positive updates.

UTEP Mission still has scope specific to El Paso region, while BSCS PEO has national/global perspective. Recommend UTEP Mission widen scope for consistency.

PEO-1 consider these updates to emphasize theory as well as practical application.

Our graduates will be **innovative** and productive problem solvers in industry, academia, and government who have the ability to apply theoretical and technical computer science knowledge to analyze data, design and implement reliable and secure computing systems of different levels of complexity **towards real-world solutions** (Quality of our Graduates).

2. How effective are the newly defined BSCS POEs at addressing the needs of the different program constituents?

Base PEOs are extremely good, but with our recommended update to PEO-1 could strengthen as indicated.

3. What changes, if any, does the Board recommend to the stated program PEOs?

See item 1.

4. How do Board members rate the attainment of the PEOs by BSCS program's graduates employed at their organizations?

Some highly generalized observations:

Areas that are very positive include highly effective problem solvers, very hard working & dedicated. It was observed that since many UTEP students work while going to school, likely cultivated a strong work ethic that has translated into the professional environment.

Areas to strengthen include improved communication skills/confidence addressed through continued efforts working in teams, technical presentations, and interview skills.

5. What instruments and processes does the Board recommend for the assessment of the BSCS program's PEOs?

The addition of CS Alumni Relations Coordinator is a great idea which will require a multi-modal solution. Consider the implementation of a persistent website for solicitation of alumni and industry feedback. Good discussions earlier in the day to retain email addresses and LinkedIn connections as a means of staying connected with BSCS graduates.

6. How well do the stated SOs prepare graduates in achieving the PEOs?

Consider modification of SO(s) to be explicit about working in interdisciplinary teams BSCS-4, data analytics BSCS-2, and secure processing [multiple SOs could be updated]. This needs to be weighted against the level-of-detail in the ABET requirements.

Further Comments

Consider additional emphasis on internships, public/private collaborations for project definitions.

Curriculum Changes

1. How well does the MSIT program national needs?

MS in Data Analytics is a tremendous update.

2. What recommendations does the Board have regarding the proposed changes to curriculum (MSIT, Fundamental CS, Systems Sequence)?

MS in Data Analytics – include curriculum in statistics and mathematical modeling; consider close partnership with Mathematical department to have theory in Math and computing system application in CS; Database course in BSCS as prerequisite

Fundamental CS – At least two programming languages should be required. Java, Python, C are great languages at the BS-level, with industry need.

Systems Sequence – In general we think the refactoring of the 3 courses was very positive. Consider names of 3 course to be more aligned with standard academic naming.

3. What changes would the Board recommend regarding the established and proposed BSCS concentrations?

Data Analytics – looks great

Cyber Security – we did not have opportunity to review, but we commented on other curriculum which would strengthen this

Further Comments

Consider use of Agile methods in the BSCS curriculum.

Consider distributed computed for Big Data applications in the BSCS curriculum.

Booming Enrollments

1. What are the challenges, besides those stated in the department's SWOT document, does the Board foresee?

How to maintain the philosophy of the personalized approach to education given the extreme growth.

2. What are the mitigation elements that could be employed by the department, college, and university to address the challenges identified above?

CS Faculty work together to define the new model for how the department will operate moving forward

- Consider getting messaging strategy utilizing consultant

- Tremendous opportunity for CS Department to grow

- Show the ROI for adding faculty

- Consider new tools, teaching methods (self-paced)

Recommend a tighter partnership with local Community Colleges (EPCC) for offering early courses and/or having more students attend CC in the first two years.

Obtain approval for undergraduate Student Aids.

Data Analytics MS Degree Program

1. [Focus on feeding the Doctoral Program on Big Data in the Math Department, a career path in industry or both?](#)

Let the Math Department own the concerns specific to the Doctoral Program on Big Data, i.e. how a Data Analytics MS degree could provide an ideal transition into the Ph.D program. Recommend CS focus on partnering with the Math Department on the Data Analytics MS on joint curriculum that plays to strengths of each department.

2. [Advice on the importance of focusing on Data Analytics given the resources we have.](#)

It is the consensus of the CS BoA that the Data Analytics MS is tremendously important. This program will likely result in increased growth, but is important due to the critical current needs in academia and industry in this area.

3. [Importance of interdisciplinary work, which areas do you see as important?](#)

In regard to interdisciplinary work in the Data Analytics MS program, interdisciplinary areas of importance include Statistics, Machine Learning, Distributed Computing, Data Mining, and System Analytical/Performance Modeling.

4. [What do you think would be the potential students for this program? What expectations are reasonable to have for incoming students?](#)

Potential students and expectations for the Data Analytics MS program would include BSCS graduates with background/emphasis on Database and Distributed Computing, as well as BS Math graduates with background/emphasis in Statistics and Numerical Analysis.

5. [How can we better serve industry demands?](#)

It is the consensus of the CS BoA that the UTEP CS Department has been tremendous in it's involvement and collaboration with industry. It was mentioned in the CS BoA meeting that this group would work to meet annually, rather than the current every 3 years. This would be a very good update.