College of Engineering Information Technology Committee Final Report

March 29, 2010

Members	Term Expiring
Prof. Anton Kruger, Chair	May 2012
Prof. Asghar Bhatti	May 2010
Prof. Geb Thomas	May 2011
Ex-officio Member	
Doug Eltoft	Director of CSS

General Charge for 2009-10

The Information Technology Committee shall be responsible for reviewing and evaluating policies governing hardware, software, and computing services within the college, and for making appropriate recommendations regarding computer resources to the dean and the faculty.

ITC Committee Response

The ITC committee has met and started its work on the charges. Responses to the Specific Charges for 2009-10 are indicated below. Additionally, ITC members will visit with CoE DEOs and solicit their input. The ITC committee will request to attend faculty meetings to gather additional input.

Specific Charges for 2009-10

1. Investigate and prepare a list of the current academic software in the College to support the curriculum. The software list and usage rate will be prepared by CSS, which then needs to be completed by ITC by working with DEOs and CSS to identify Engineering courses that require each software package.

   ITC Committee Response

   Doug Eltoft, Director of CSS, reports that CSS has deployed a new management application called *Altiris*, which tracks usage on CSS-supported computers. The software tracks the number of times users launch a particular software package. The number of launches will serve as a proxy for usage rate. The software can track individual students launched, but cannot track what Engineering course required its use. Some software packages are used on a daily basis, while others are used heavily at certain times in a semester as students work on specific assignments long periods. Additionally, some important software is used heavily once per year when a specific course is offered. Thus, the committee feels it will take several semesters before meaningful usage rate statistics are in place. Linux-based software packages, which are becoming increasingly popular, are counted using locally written software and a database. Finally, the launch track software will track all software but the interest is in commercial software and not open-source software.

2. Make recommendations on how to streamline the software required by Engineering courses to support the curriculum and satisfy ABET requirements. The objective is to maximize effectiveness of the CSS-supported software for the curriculum.

ITC Committee Response

The Committee believes that streamlining software programs to support the curriculum and ABET requirements would be beneficial. Rather than focus on the effectiveness of CSS's effort, however, we respectfully suggest that the primary objective of this effort should be to enhance the teaching and research mission of the College. Only some of this effort can be conducted at the College level, however, because of discipline differences in software and modeling needs. For example, while the IE and ME programs may be interested in streamlining the ProE solid modeling package, it is likely that the Civil Engineering program would prefer the AutoCAD package. Nevertheless, the College may be able to lead a streamlining effort by promoting a general modeling package that may be useful in each of the programs. The Committee believes that the MATLAB package is most likely to provide utility that would be readily usable by all of the college's programs. The ITC committee believes the following courses provide a reasonable initial roadmap:

- 59:006 Engineering Problem Solving II
- 59:007 Fundamentals of Engineering I—Statics
- 59:008 Fundamentals of Engineering II—Electrical Circuits

These courses already use MATLAB. This is especially true for 59:006, Engineering Problem Solving II, which devotes significant weeks of instruction to MATLAB.

We believe that this effort will help these courses meet the ABET requirements such as "Use techniques, skills, and modern engineering tools." Additionally, instruction in 59:007 and 59:008 are bound to be more efficient if instructors in those courses build on MATLAB knowledge acquired in 59:006.

3. Review the current CSS Policies on Academic Software Funding & Acquisition Guidelines and make recommendations on how to improve the Engineering College academic software request, evaluation, acquisition, and renewal process with regard to faculty and DEO involvement.

ITC Committee Response

The Committee recommends that CSS establishes a mechanism through which faculty can formally request new software or renewal of software. The Committee envisions a website where faculty will provide information such as:

- Course number(s) of courses related to the requested software
- Is/are these core CoE course(s)?
- Estimated number of students that will use the software
- Is/are these course(s) assessed with respect to ABET?
- Faculty member's perceived importance of the software for the course(s) (crucial, desirable, …)

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- Alternative software that may fill the need

The website will display costs and summarize requests from other faculty to provide context for faculty requests. The CSS director will then make recommendations to the Committee for which software to purchase and support.

4. Recommend specific charges for the 2010-11 Information Technology Committee.

   ITC Committee Response

   We recommend that the ITC, in concert with the Curriculum Committee, investigate the feasibility of embedding the use of specific software in the Course Learning Objectives of some core courses.

   We recommend and intend to proactively engage instructors of the three courses listed under Charge 2, in explaining and advocating the advantages of using MATLAB across courses.

5. Submit an interim report by January 31, 2010, and a final report by April 1, 2010.

   ITC Committee Response

   The ITC committee has submitted an interim report, received feedback from the EFC, and addressed the feedback in this, the final report for 2010.