MILWAUKEE SCHOOL OF ENGINEERING
B.S. COMPUTER ENGINEERING
INDUSTRIAL ADVISORY COMMITTEE MEETING
December 2, 2011

Attendees:

Dr. Eric Durant – MSOE CE Program Director
Dr. Darrin Rothe – MSOE CE Faculty

Ms. Elyse Hobson – MSOE Student Representative
Mr. Alex Lurvey – MSOE Student Representative
Mr. John Krenzer – MSOE Student Representative
Mr. Dmitry Tchaikovsky – MSOE Student Representative
Mr. RJ Wright – MSOE Student Representative

Mr. Josh Cochrane – Johnson Controls
Mr. Charles Fastner – Direct Supply
Mr. Joe Izzo – Rockwell Automation
Mr. Tom Klein – Rockwell Automation
Mr. Tom Kraus – GE Healthcare
Mr. Mark Krueger – NVIDIA
Mr. Ryan Speiser – NVIDIA
Mr. William Strangeway – Johnson Controls
Mr. Jeff Zingsheim – Honeywell

Welcome and Introductions – Given by Dr. Durant (MSOE) and Mr. Zingsheim (IAC Chair)

Program Information

- Meeting Minutes – Minutes from the October 22 meeting were presented. No changes were noted. Please send any changes to Dr. Durant in the next couple of weeks.
- Student Statistics – Regionally sourced class size is expected to decrease, as our enrollment standards increase. But, we are focusing on a wider geography and concentrating on offering more to top students. Some new standards include: no more probation, all freshman being calculus ready, higher ACT scores, early intervention by advisors, and our Welcome Week, which is used to prepare incoming students for college life at MSOE.
  - Note: Student Statistic information handout is confidential.

Review of Events - Recent

- FedEx sponsored the CE networking event again this fall. The event primarily targeted students and included T-shirts, a burrito dinner, a raffle drawing for prizes, networking with alumni, and a speech from an industry expert. The event had a turnout of over 100 and student feedback was very positive.
- Op Computer Competition – This is a regional competition for high school students with a focus on computer science. MSOE hosts and students are judged on a series of tasks to solve in Java or C++. This year 27 teams of 4 high school student competed on Friday, November 18.
- IEEEXtreme Programming Competition – IEEE is a professional organization and organizes this 24-hour worldwide competition, which took place on October 21-22. Students work to solve a set of programming problems. MSOE had 29 students on 10 teams competing and did extremely
well with its top team taking third place in IEEE Region 4 (10 US states plus part of Canada) and several teams close behind.

- **Plexus-sponsored 3rd Annual EECS Embedded Design Competition:** Dr. Rothe reported that the competition will be launched soon and will again be based on a “bag of parts” model. Students will work in small teams and projects will be judged and prizes awarded near the end of the academic year.

**Review of Events – Upcoming**

- **Recruiting**
  - Open House dates are Saturdays December 3 (tomorrow) and April 21, 2012.
  - IAC members are invited to attend. It is a good opportunity to answer questions from parents and to bring demos.
- **Industry Forum** for students – Friday September 28, 2012 at 11am
  - This will be the third department-wide forum.
  - If you are interested in attending, please email Dr. Durant.
- **CE Student Event in Spring** – The event will be sponsored by Johnson Controls and will take place on Monday, March 19, 2012. IAC members are welcome.
- **IAC Meeting** – We are looking for a host for next fall’s IAC meeting. Last year’s meeting was held at FedEx. [N.B.: today’s meeting is being held at Johnson Controls.] If interested, please contact Dr. Durant.
- **Rockwell Collins** is sponsoring an EECS-wide student event in December and will provide tours of its facility in Cedar Rapids via a bus trip.

**Program Educational Objectives (PEOs)**

The IAC discussed the proposal to replace the existing 5 PEOs with 3 new PEOs. The committee agreed on the rationale and criteria in the proposal (key among them being that PEOs must be measurable and must go beyond what alumni can do at graduation to where they are expected to be a few years after graduation). Mr. Speiser noted that the proposed PEOs are appropriate since they correlate well with NVIDIA’s criteria for promotion.

There was significant discussion on the first PEO and some wordsmithing was done. The final wording will reflect that “delivery” appropriate to the discipline is key, and will be inclusive of services and processes.

The committee accepted the proposed wording of PEO 2, which is inclusive of both leading people directly and leading people indirectly through heading up specific team efforts.

Mr. Klein suggested an additional question for the next cycle of the alumni survey: “How did your CE degree make you successful in your current position?”

**General Discussion**

**Industry Member Questions:** The two items on the agenda were briefly discussed, focusing on the ordering of material in the curriculum (top down, bottom up, hybrid; placing items in sophomore year that are most useful for internships). The committee also discussed use of high level languages. Virtually all members noted heavy use of C or C++ and agreed these should be kept in their strong role. About 1 or 2 members indicated their groups make significant use of Java while slightly more, 2 or 3, indicated that they make significant use of C#. The virtues of starting with the highest level language (deferring memory management, ...) vs. leaving it as a senior topic (C/C++ maturity developed more rapidly, currently peaks in junior year) were discussed, but no consensus was reached.
Student Member Questions
Mr. Wright – Should “systems engineering” topics and large scale design have a more significant role before the senior year? The members discussed various definitions of systems engineering (DSP/board-board communication system, system of systems, and everything in between). The members concluded that we probably are not doing less of this than before, but that it may come later given the evolution of the OS out of CS3841 into CE3910 (Embedded III), etc. The evolving role of CE4920 (Embedded IV) and its potential to further strengthen higher level systems engineering topics was discussed.

Mr. Tchaikovski – The current incarnation of CE4920 is not as challenging as many earlier CE courses. In fact, some topics were repeated. Dr. Durant reported that we expect this to be a transient issue as we have corrected deficiencies of coverage in a few specific sections of some of the earlier embedded systems courses.

Meeting adjourned to tour at 10:33am