The meeting was called to order at 8:30 a.m. in the Schroeder Room of the MSOE Walter Schroeder Library.

Introductions were made. Guests Leo Vinitsky (FedEx) and Allan Wick (Stark Investments) were welcomed.

Minutes from the May meeting are published on the CE web site.

**Student statistics.** A graph of student statistics, indicating numbers for each grade level and graduates, was part of the meeting packet. Dr. Durant said that we are starting to see an improvement in enrollment numbers, after several years of a nationwide decline in computer engineering. The focus of this meeting will be to discuss what we can do to continue to attract the best quality students, as well as increase quantity to meet the demand for graduates in the region.

This year’s freshman class is slightly larger than last. A significant improvement was made in retention, with 80% from freshman to this year’s sophomore class. Seventeen seniors will graduate this year, followed by another small class next year. After that, the numbers improve. We would like to see 70 to 100 incoming freshmen in the future.
Other programs at MSOE have not seen the same dip. ME is huge right now. SE is seeing sustained growth since its inception and is now comparable to CE. Dr. Williams said EE has seen steady growth the last five years, this year a 10% increase over last. Overall there were 740+ freshmen at MSOE this year.

The quality of CE students continues to be solid. Statistically, there was a slight improvement this year with an ACT average score of 27.5.

New curriculum. The new version 3.2 involves a very minor revision being made to implement a university mandate that all engineering programs include a chemistry course. Now, instead of five physics courses, there will be one chemistry course followed by four physics courses (still ending with semiconductor physics).

Running this quarter for the first time is CE-2810 Embedded Systems, where students are learning C language, building on assembly language, and reviewing structured programming concepts.

Java is in the freshman year. Assembly, C, and C++ are used for embedded focus. The goal is to expose students to a variety of languages.

Next year will be first time CEs take the new car-in-the box sequence and digital signal processing. Many students took DSP as an elective before; now it is required. The curriculum still has three technical electives.

Mr. Vinitsky asked where mobile computing is taught in the curriculum. Remote control and decoding communications are covered, but not mobile computing specifically. It is a senior elective, but not part of the core curriculum at this time. Dr. Durant will discuss with faculty how this can be added to the curriculum, as well as wireless standards. A number of senior design projects include wireless standards, which, right now, students research on their own.

A new junior-senior embedded systems two-course sequence is being developed. There is potential for wireless exposure in that sequence.

Mr. Giljohann thought a mobile computing/wireless network elective would be very popular with students. It’s where things are going, and most students have some kind of PDA.

Dr. Durant said elective voting ends today. A mobile computing elective is on the list. If there is enough student interest, a course will probably run next year.

Upcoming events
Company tours – Many committee reps have offered tours in the past. Students always enjoy seeing what goes on in industry. The IEEE student branch arranges these tours. Dr. Durant will talk to them if anyone on the committee is interested in hosting a tour.

Open Houses—The next open house is scheduled for Saturday, April 19. Lately, we have invited a committee member to give short presentations as part of the one-hour tours for CE prospects. Mr. Treichel and Mr. Kraus reported on their experiences. They suggested having more representatives on hand to talk to students and parents between tours. They could also address programs besides CE, since their work does include SE and EE areas as well. Adding a representative in the Campus Center was also
suggested. Mr. Giljohann said he is often approached at open houses for the “student perspective.” He suggested adding students with projects to the tour. Dr. Durant will pursue these ideas.

*Spring CE IAC meeting* – Friday, May 23, 2008 – the day of the senior design show. Details will follow nearer to the date.

**Current priorities for the CE program**

*Student Retention* – Bringing CE topics into the freshman year was driven by retention. We are getting positive feedback so far.

We are also trying to build a stronger sense of community among students. The student picture board is one effort, and we plan on having at least one CE social networking event each year (last night, 80 students attended).

Historically, attrition statistics show that of students lost, about half go to a different school or leave school altogether; another half change major in freshman year. Last year, CE lost as many as it gained to major changes. We are not sure about this year yet. The number one reason for leaving school is “academic difficulty,” and number two is “trouble adjusting to college.”

*New course development* – Faculty are busy developing new courses for the major curriculum change made a few years ago.

**Future priorities for the CE program**

The group agreed that recruitment was the number one priority. Increasing class size will enable other goals to be met.

Number two priority: Establishing industry partnerships/sponsorships with senior design projects.

There was some discussion on internships and what role the Placement Office plays with students other than graduating seniors. Most IAC members said internship opportunities were available at their companies, but that they had never been contacted by MSOE.

Mr. Zingsheim suggested adding to freshman orientation a short portion on internships. The percentage of interns permanently hired by their employers is high. More internships could help with retention.

Dr. Durant said he would work with Placement and with faculty to take a more active role connecting students with internships.

**Recent activities**

Two weeks ago, the Op Computer Competition attracted over 100 high school students from around the region. Teams were given Java programming problems. During that event, many high school students expressed a desire to learn Java in high school; most schools are teaching C or C++. Dr. Suri (SE program director) and Dr. Durant have set up a meeting with MSOE’s Project Lead The Way administrator to discuss offering training for high school teachers. Right now, PLTW’s emphasis is on engineering.

The CE student event last night had a good turnout of students, as well as nine alums. The alums had very positive attitudes and spent time talking with current students. We will continue to hold this event at least once a year. Both Mr. Giljohann and Mr. Radtke said the event is a good idea because not a lot
of CEs join clubs; this is one event where they all get to network. Students look forward to it. Dr. Durant thanked Mr. Kraus for participating last night, and Mr. Treichel for participating last spring.

Dr. Durant said he would like to run another event this year, if possible, since feedback was so positive. Mr. Vinitsky said he would be willing to sponsor the event.

Mr. Giljohann suggested getting companies to sponsor a project or technical problem from industry. Dr. Meier (CE faculty) tried last year to organize an embedded system design one-day competition on a Saturday. It didn’t materialize last year, but he is trying again this year.

**Ideas for next meeting**
Mr. Vinitsky would like to learn more about business-oriented curriculum update efforts being made. Where are we teaching business/project management skills?

Present a summary of alumni survey results. What kind of work are graduates doing?

**Potential future priorities**
Gleaned from discussions at these meetings as well as others, some of the items the program will address in the future include:

- balancing good technical skills with team leadership skills
- looking at ways to integrate entrepreneurial topics throughout curriculum (part of KEEN grant)
- exercising critical thinking skills outside the engineering courses
- growing industrial partnerships with senior projects
- increasing freshman class size; increase outreach to high schools