Texas Higher Education Coordinating Board

Texas Higher Education Coordinating Board and Lumina Foundation for Education

DRAFT Minutes
Tuning Oversight Council for Engineering
January 7, 2011
10:00 a.m. to 3:00 p.m.

Wyndham Garden Hotel and Conference Center
Executive Learning Center

Members Attending: April Andreas, Robin Autenrieth, Andy Banerjee, Klaus Bartels, Michael Casey, Roderick Crowder, Dan Dimitriu, Jess Dowdy, Saad Eways, Forrest Flocker, David Galley, Alejandra Gonzalez (student), Tenerio Goodwin (student), Sheryl Harris, Butch Hayes, Martin Knecht, Frank Lewis, Alan Morris, James Nelson, Pamela Obiomon, Mariano Olmos, John Pearce, Lynn Peterson, Thomas Pressly, Kenneth Rainwater, Jamie Rogers, James Sells, Bart Sheinberg, Mukul Shirvaikar, Bernard Smith, Vivek Tandon, Vijay Vaidyanathan, Benton Wainscott (student), Sheldon Wang, Kathryn Wetzel, Victor Zaloom

Facilitators and other Attendees: Charlotte Biggerstaff, Reinold Cornelius, Harrison Keller, Kevin Lemoine, Araceli Ortiz, Debbie Rodriguez, Sarah Rondinelli, Mary Smith, Melinda Valdez-Ellis, Rachel Zhang (Tarrant County Community College), Ricardo Solis (TSTC-Harlingen)

The meeting convened at 10:08 a.m.

Continental Breakfast, Welcome, and Review of Council Charges

Dr. James Nelson, Chair, welcomed members to the meeting

Approval of Summary Minutes from the October 15 Council Meeting

Dr. Nelson requested a motion to accept the minutes from the meeting on October 15. A motion was made and seconded by members of the Council to accept the minutes. Minutes were accepted unanimously at 10:15 a.m. with no current attendees abstaining.

Overview, Reports of Progress on Work Items, Comments and Direction

Dr. Nelson requested a report of progress from each of the four discipline-specific committees.

Dr. Ken Rainwater, Chair of the Civil Engineering Committee, described the Committee as being caught up, and he praised the Coordinating Board liaison, Dr. Reinold Cornelius, for keeping the work on track. The Committee used the Civil Engineering Body of Knowledge in their work. Dr. Rainwater felt the Committee would be able to complete their work at this meeting.

Dr. Sheldon Wang, Chair of the Mechanical Engineering Committee, described his Committee as being on target. He said there have been two phases of their work: Mapping the ABET A-K objectives with the six levels of competency. The Committee has completed all but the last two. The second phase is the consideration of the requirements for different levels of education. Inspired by the samples of work completed by the Civil Engineering Committee (which were shared earlier via e-mail), the Mechanical Engineering Committee will use their work as a guide for the finished product.

Dr. Victor Zaloom, representing the Chair of the Industrial Engineering Committee, described the Committee as being in great shape. Definitions have been completed and outcomes defined. The work for this meeting would be to polish what has been done.

Dr. Roderick Crowder, Co-chair of the Electrical Engineering Committee, reported that the work is on target. Outcomes have been completed, and the Committee would assign appropriate levels at this meeting.

Dr. Nelson went over the agenda for the afternoon, asking the committees to begin discussion in their breakout sessions on the identification of lower-division courses to be aligned for each specialization.

Council Discussion of Tuning Surveys

Dr. Nelson adjourned the meeting to break-out sessions at 10:45 a.m.

Breakup into Discipline-Specific Committees

Members of each of the discipline-specific engineering committees met in four separate groups:

- Tuning Committee for Mechanical Engineering (Blanco Room);
- Tuning Committee for Electrical Engineering (Guadalupe Room);
- Tuning Committee for Civil Engineering (Barton Creek Room); and
- Tuning Committee for Industrial Engineering (San Gabriel Room).

Boxed lunches were served to provide time for a working lunch. Each group received brief instruction on using the Texas Common Course Numbering System website (www.tccns.org) during breakout sessions, with Mechanical Engineering also receiving instruction on SharePoint.

Afternoon Session

The full Council reconvened at 2:00 p.m. in the Executive Learning Center. Dr. Mary Smith pointed out that this is the first meeting at which members received handouts in electronic form and asked for input. The Council members were unanimous in their preference for electronic handouts, whether on flash drives or via e-mail.

Dr. Kevin Lemoine stated that the community college representatives had met on January 6, 2011, and heard presentations on transfer and assessment of courses with consideration of ABET accreditation. He mentioned that there had been good questions and discussions. He also pointed out that the Coordinating Board is currently revising the rules for the Core Curriculum that will require revisions to the Academic Course Guide Manual (ACGM). He also discussed unique need courses. There will be many proposed revisions to transfer rules, which will be posted for public comment before acceptance.

Dr. Smith added that the presentations from the meeting on January 6 were recorded and will be posted to the Coordinating Board's Tuning website (www.thecb.state.tx.us/TuningTexas) for download, should members wish to access them. She then discussed the timelines for the current Tuning project. She felt that although much of the work of the tuning committees would be completed at this meeting, there would be additional "tweaking" needed, possibly requiring at least one more meeting. She reiterated the need to release the Recent Graduates Survey to campus graduates in order to receive input, as no recent graduates have yet completed the survey.

She asked committees to try to complete their final drafts of their discipline-specific program outcomes at this meeting. The next step is to determine additional courses needed for alignment over those completed for the Voluntary Mechanical Engineering Transfer Compact. She asked that members think about courses available on their campuses, and requested that the Council come to consensus on appropriate courses across the state. She asked that discipline-specific committees have virtual meetings sometime in February to work on course alignment by discipline in preparation for a last face-to-face meeting in April.

Updated Timeline for Tuning Activities and Survey Results to Date

Dr. Smith outlined the timeframe for the faculty survey, with a target date of release of **January 25, 2011**. She pointed out that the faculty survey will combine the same survey questions, but include program-level outcomes.

She described the beginning of the next round of tuning committees for Biomedical and Chemical Engineering, Biology, and Chemistry. Chief academic officers and deans are currently receiving memos and letters requesting nominations for specific committees. Institutions have been targeted with the intention of the broadest participation statewide as possible within budget restrictions.

Finally, another change to the timeline was discussed. The February 14 date as the end of the 30-day comment period will change. She requested input on a last meeting in April, and asked whether community college representatives needed a second separate meeting.

Dr. Smith then introduced Dr. Melinda Valdez-Ellis, Associate Program Director on the Coordinating Board staff and liaison to the Electrical Engineering Committee, who presented information gathered to date on the student and employer surveys. Results of employer surveys resulted in discussion by Council members, who questioned some of the employers' perceptions of students' abilities. There was additional discussion about a disconnect between students' perceptions of their design abilities, as students had no doubts that they were strong in that area, and those of employers who reported not seeing that skill demonstrated in new engineers. Council members felt that perhaps the survey should be completed by people who supervise interns. It was decided that individual links to the employer survey would be re-sent to Council members, and they could distribute the link to employers with whom they work regularly. Individual results will be provided as they are gathered.

Dr. Sheryl Harris, Co-chair, recommended that committees consider issues regarding courses in the ACGM, such as Circuit Analysis. She suggested that it would be a good time for institutions to present needed changes.

The question was raised as to whether or not there would be time to continue the discussion on Introduction to Engineering at this meeting. Dr. Nelson pointed out that there will be a task committee formed to look at the broader issues surrounding transfer of this course, and campus leaders would be asked to participate in this work.

Dr. Lynn Peterson asked whether committees would be completing Student Learning Outcomes on the courses chosen today. Dr. Nelson pointed out that it is a lengthy process, and it would be just beginning

today with the identification of specific courses. Dr. Smith pointed out that a simple spreadsheet has been created on flash drives to assist committees in gathering courses by campus.

Compile Recommendations for Discipline-Specific Courses Needing Alignment for Compact

Course alignment recommendations included the following:

- Introduction to Engineering (completed, but needs additional work)
- Circuit Analysis and Lab (completed, but needs additional work)
- (Plane) Surveying (Civil)
- Programming for Engineers (Civil)
- Technical Writing (Science) (Civil)
- Engineering Programming (2304) (Mechanical)
- Mechanics of Materials (Solids) (Mechanical)
- Engineering Graphics 2 (1305) (Mechanical)
- Linear Algebra (Electrical)
- Differential Equations (?) (Electrical)
- Discrete Math (Industrial)
- Statistics – Calculus-based (Industrial) (Wish List)
- Thermodynamics (Wish List)
- Electromagnetics (Wish List)
- Digital Electronics (Wish List)
- Engineering Economics (Wish List)
- Materials Science for Engineering (Wish List)

Dr. Lemoine stated that the Coordinating Board is currently launching an initiative to look at English/Technical Writing.

A Council member asked if additional courses could be added to the ACGM for use at the community college level. Dr. Lemoine said that any course would need to go through the approval process. If a sufficient number of two-year schools request it and a sufficient number of four-year participants will accept it, the course could be added.

Two things need to be considered: the Body of Knowledge for the discipline, and the courses to be aligned for each (courses that will transfer). Dr. Crowder suggested that what is missing in this

consideration becomes what is needed. Dr. Lemoine suggested that courses can be added to the ACGM or modified as needed.

Closing Remarks and Issues to be Resolved

Dr. Nelson suggested that all course syllabi are now required to be available online. He asked each Council member to send a link or the syllabus (including the description and the Student Learning Outcomes) to Debbie Rodriguez and Mary Smith at the Coordinating Board.

He stated that it is important to the project that members of the Council act as ambassadors to explain the Council's efforts to colleagues.

Adjournment

A motion to adjourn the meeting was made and seconded at 2:45 p.m. The meeting was adjourned by Chair Nelson.