Texas Higher Education Coordinating Board and Lumina Foundation for Education

Minutes
Tuning Oversight Council for Engineering – Leaders' Meeting
July 30, 2010
8:30 a.m. to 9:45 a.m.
Texas Higher Education Coordinating Board
Board Room (2.140)

Members Attending: Jess Dowdy, Sheryl Harris, James Nelson, Pamela Obiomon, Kenneth Rainwater, David Wyrick, Victor Zaloom

Facilitators and other Attendees: Charlotte Biggerstaff, Reinold Cornelius, Kevin Lemoine, Araceli Ortiz, Debbie Rodriguez, Mary Smith, and Melinda Valdez-Ellis

Note: Documents and presentations referenced in these Minutes will be available online on a Tuning Website in September.

The meeting convened at 8:45 a.m.

Continental Breakfast, Welcome, and Review of Council Charges

Dr. James Nelson, Chair, welcomed members to the meeting and provided a brief overview of the agenda for the meeting and the tuning process.

Review of Tuning Process and Outcomes

Dr. Mary Smith gave a brief overview of the logistics of the tuning process. She discussed the timeline for the final product from each tuning committee being January 2011. She noted that the process is about one month behind the timeline due to the requirements for getting approval for the surveys.

Dr. Kevin Lemoine clarified two objectives of the meeting – coming to consensus on program level outcomes, and the course alignment to ensure that transfer students from community college have an adequate foundation for success at the university level. Dr. Smith noted that committees should be ready to begin this process in October 2010.

Dr. Nelson clarified the process of tuning using a handout on the Body of Knowledge and discussed defining the discipline for Texas in terms of outcomes for successful preparation for students. ABET Outcomes a-k may be the model but must be geared toward the specific discipline. Dr. Lemoine discussed the compilation of ABET criteria and pointed out the handout.

Dr. Nelson reiterated that universities will not be forced to adopt the outcomes, but that committees need to provide detailed descriptions of each outcome. He pointed out that there is no need for discussion of courses yet in the process. Define the desired level of achievement for each outcome – what students

can do (from Bloom's Taxonomy)- and committees should achieve consensus on the desired level of achievement (for example, in math) at some point:

- After finishing High School
- After finishing Community College
- After finishing University

Dr. Nelson clarified the "deliverables" expected from each committee:

1. A one-page statement of what is the outcome and what does it mean
2. A chart displaying how those outcomes relate to the levels of achievement on Bloom's Taxonomy
3. A chart showing expectations – "what the student can do" – using verbs from Bloom's Taxonomy
4. Alignment of **Foundational** Courses – only those taken at community colleges for use in transfer to ensure that the content of the courses is aligned to prepare transfer students for success in upper-level courses

Dr. Nelson emphasized that a given institution would not be forced to do anything; rather, that committees should consider a state expectation of where levels should be. Seventeen courses have already been horizontally aligned by the Mechanical Engineering Articulation Transfer Curriculum Committee (ME Transfer Committee). The committees' focus for this project is on any additional courses needed by other engineering disciplines.

A member requested clarification that the assignment for this meeting is not to talk about individual courses, but about outcomes and levels of expectations for student achievement. Dr. Nelson agreed with the clarification, and reiterated that while institutions may have identical outcomes, each institution has the academic freedom to determine how students will meet the expectations.

Dr. Nelson pointed out that Lumina has requested mapping of careers students can move into after completing the degree. He showed a bubble chart as an example. He requested that committees keep such charts quite general. A second bubble chart is requested that shows what types of courses need to be taken as foundational requirements for the degree.

Dr. Victor Zaloom requested that the samples of deliverables be emailed to the committee. Dr. Nelson said that samples will be emailed to chairs and co-chairs as well as being uploaded to Sharepoint.
A member requested information on accessing Sharepoint.

Dr. Reinold Cornelius asked Dr. Nelson to revisit the deliverables being requested. His understanding is as follows:

- One-page statement of outcomes – one for each criterion, no more than one page
- Chart relating outcomes to levels
- Vertical bar chart – expected achievement upon completion of different levels
- Two mapping charts – jobs and coursework needed (including upper-division) in general

Dr. Nelson reiterated that the chart of coursework is not intended as curriculum and encouraged committees to resist getting too detailed in their course descriptions. Most of the courses pertaining to engineering are already aligned as a result of the work done in 2009 by the ME Transfer Committee, but there may be a few courses left that are needed for other disciplines.

Dr. Araceli Ortiz suggested another format (black-and-white version) of the chart with check-boxes
She will share a copy with other THECB committee liaisons.

Dr. Dave Wyrick mentioned feeling a little nebulous on the process and stated his concern about the committee creating a Body of Knowledge to be used. He stated his belief that it was the function of a professional society to define this, not a committee in the State of Texas. Dr. Nelson suggested that every institution has defined a body of knowledge for graduates. Now a broad perspective of where this

falls is needed to guide students toward what they need. Debbie Rodriguez suggested that the Body of Knowledge as defined by the professional society and the job of the committee should go hand-in-hand, due to the overarching importance of the professional societies in engineering to the profession and, therefore, to the institutions. Dr. Cornelius reflected that the work of the committee will be more limited than the Body of Knowledge as set up by professional societies. He believes that the committee is working on a description for students and the public as to what is required to be successful in the field. Dr. Nelson used Civil Engineers' professional work as an example with their "Raising the Bar." These committees are defining the bar for transfer students.

Co-Chair Sheryl Harris considered the semantics of the discussion. She has redefined the "Body of Knowledge" for purposes of the committee as "competencies." At the end of the project and as committees build, what is looked at as competencies in the areas within the program, what level of competence should a graduate have in math (for example). Dr. Wyrick agreed that this is a better definition and easier to work with. Dr. Nelson agreed that the committee should change their discussion to reflect "competencies," as members felt more comfortable with a term other than Body of Knowledge, which reflects back to the specific work of professional societies.

Dr. Mary Smith reminded the committee of the definition of tuning from Lumina as "what the student should know and be able to do" at the completion of various levels of their programs. Dr. Nelson stated that Lumina wants to encourage more students to graduate from college. THECB is supporting this through aligning courses so that transfer students can more successfully move from community colleges to universities.

Report of Progress to Date by Committee

Dr. Nelson requested a progress report from each committee chair in terms of where each is in the tuning process.

- Dr. Victor Zaloom, acting Chair of the Industrial Engineering (IE) Committee, reported that IE has their outcomes determined as well as the horizontal axis of a Body of Knowledge chart well defined. He stated that their next step will be to determine the color-level of achievements in terms of the outcomes and then define them. The committee will then move to the five deliverables. He stated that the committee has had no disagreements and is on track for completing the project as expected.

- Dr. Ken Rainwater, Chair of the Civil Engineering (CE) Committee, expressed that the CE committee has been confused during the first two meetings. The committee has been discussing courses, and while it was useful, they will get back on track and then go back to that during the course alignment phase now that there is a better understanding of the assignment. The committee has had one virtual meeting.

- Dr. Pamela Obiomon, Chair of the Electrical Engineering (EE) Committee, stated that EE has been on the course track, like the CE committee has been. She said that the committee will move back to the Body of Knowledge/Competencies discussion today.

- No chair was present from Mechanical Engineering (ME), but it was mentioned by a member that Eric Taleff had sent a draft with the UT-Austin ABET focus, which was very informative. He believes that ME is on track.

Dr. Ken Rainwater asked whether or not the committees will need to tune the core curriculum required in programs for graduation, such as English and Speech. Some institutions have different ways to fulfill the core requirements. He feels it is as important to the committees to know what not to do. As a product,

his understanding is that committees will not align general education courses. Dr. Nelson agreed that that understanding is correct. **He replied that the charge to the committees is only to tune the technical courses (math, science, engineering). For the alignment portion, the committee is responsible for only for the technical courses and not for other required core courses. He emphasized that committees should keep courses separate from competencies.** Dr. Harris clarified that communication (as an example) may be one of the competencies determined in engineering. The committee would then list those levels of specific competencies, but coursework would be determined when English is tuned. She also mentioned that many universities and programs require different and very specific speech classes. She stated that it would be very helpful to community colleges if outcomes were specified, since it is difficult to offer so many different speech classes and be sure they will have the course that is needed to transfer to a given program.

Dr. Smith revealed that, while these are the first of the disciplines to be tuned, several other non-engineering disciplines will eventually go through the process. Dr. Nelson recommended that committees not get bogged down in the core classes.
Dr. Cornelius noted that, if required, specific speech courses could be taken later in a student's career, after transfer. Dr. Harris expressed a concern about students going "core complete." Dr. Smith added that a new rule has just passed: that if an individual has completed a transfer curriculum based on a statewide articulation agreement, it does not have to have been completed at the community college. (TAC §19, Chapter 9, Subchapter J, rule 9.183(c)(2))

The specific language of the rule can be found here:
http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=19&pt=1&ch=9&rl=183

Wrap-Up

Dr. Nelson requested that each chair/co-chair create an agenda using the template provided for the breakout meetings of each committee and return them to Debbie Rodriguez. Committee members have received specialized packets for their work today.

Dr. Smith discussed the contents of the specialized packets. Debbie Rodriguez clarified the process of putting together the information in the packet.

Adjournment

Dr. Nelson adjourned the meeting at 9:42 a.m.