



College of Engineering Technology

Surveying Engineering Advisory Committee **Meeting Minutes**

April 22, 2016

I. **CALL TO ORDER**

John Fenn called to order the Surveying Engineering Advisory Committee's spring meeting at 8:00 AM.

II. **ROLL CALL**

Don Lowell conducted a roll call. The following people were present:

From the Advisory Committee: Paul Brown, John Fenn, Donald Lowell, Matthew Nawrocki, Richard Sauve, Mike Stanoikovich, Sanchit Agarwal, Jeffrey Wood, Robert Burtch, Rick Mushing, Brian Bueche (MSPE Rep)

From Ferris State University: Faculty members Khagendra Thapa, Carl Shangraw, Gabor Barsai, Sagar Deshpande, Debbie Dawson, SECT Director; Larry Schult, Dean of CET; James O'Connor, Burt & Mullet President; and Dalton Bischoff, Lambda Sigma President.

Round Table Introductions of all present were made.

III. **APPROVAL OF FALL 2015 MEETING MINUTES**

Paul Brown made a motion to accept the minutes as written; Jeff Wood seconded. The minutes were approved as written.

IV. **INTRODUCTIONS & ANNOUNCEMENTS**

Debbie introduced the guests present, Dean Larry Schult and Student Assistant Michelle Thebo.

Also announced that Gabor Barsai recently passed the Michigan Professional Surveyor exam, and Dr. Khagendra Thapa received the Distinguished Service Award.

V. **WELCOME AND REMARKS FROM LARRY SCHULT, CET DEAN**

Dean Larry Schult outlined that while we have a shovel ready project waiting for the new Annex building, we are still waiting on the money to proceed. Enrollment is up; Equipment donations are great; thank you's need to go out to the Advisory Committee for some of the equipment used in the program and for being a part of the Committee.

VI. COMMITTEE REPORTS

A. Marketing & Recruiting

1. Gabor reported on a school presentation he made as well as a recruiting pitch made by Professor Thapa. He believes that recruiting is going better due to Dr. Thapa's work.
2. Dr. Thapa spoke about two recent transfers into the program by architectural students.
3. Rick Mushing reported of a Civil Engineering Tech program to start in 2017-2018 at KCCC, and that they are recruiting high school students as a part of that program.
4. Mike Stanoikovich reported that the Facebook page was setup.
5. Katy has been forwarding names of undecided students to Dr. Thapa and Sagar Deshpande.

B. Retention:

1. Dr. Thapa outlined that some students have problems with differential equations & linear algebra. That is a problem with retention. There are currently 10 seniors in a class that started with 30 students. 20 students have been lost. There are currently 24 juniors.
2. Carl Shangraw discussed the EAC-ABET accreditation. Michigan P.E. laws require EAC-ABET accreditation. Outside of Michigan most all states require differential equations as a part of the curriculum. Current seniors don't require differential equations. Juniors coming through DO need differential equations. This hasn't been a problem thus far. The BS Degree program is to create leaders and professionals, not technicians. Carl added that ABET and the Michigan Licensing Board both need to be kept happy – a course needed to be added to comply, so differential equations was added.
3. Matt indicated that he heard from an Engineer in Grand Rapids that FSU Engineering has conflicts in other states. Matt asked if FSU has considered going back to strictly surveying and dropping the Engineering portion of the curriculum.
4. Carl asked what is the definition of "Surveying"? Much of the nationwide definition includes vast aspects of Engineering. Also, all graduates and Surveyors will be working and corresponding with P.E.'s. With an Engineering license it would be considered "peer to peer", without an Engineering license, it becomes "Master-Slave". The licensing board abdicated it's authority to the ABET board.
5. Don reported that he had discussed the issue of differential equations and linear algebra with two graduates of the FSU program from the 1970's who continued on to receive Engineering degrees, and Engineering licenses. Both of these individuals were adamant that these courses should remain in the curriculum.
6. Brian Bueche advised that linear algebra and differential equations were vital requirements to the practice of structural engineering.
7. Mike asked about the possibility of retooling the last two years of the program to include different but appropriate math courses.
8. Carl suggested that if we change the coursework, we need to find out what the students aren't getting trained in that they need – this would need to be included in any changes.
9. Jeff Wood asked whether we have statistics to tell us what percentage of FSU graduates get dual licenses.
10. Brian reported that MDOT will only hire Engineers with a BS Degree in Civil/Mechanical/Electrical. A college in Grand Rapids has an engineering degree with an emphasis on these disciplines – this is unacceptable to MDOT.

11. John suggested that the Marketing/Recruiting Committee should work on this issue and see if there is a better solution, and then report back.

C. Scholarships

1. Don reported on the “Ferris Friends and Family” presentation made at the MSPS Conference in February. Karen Lerew brought items from the Alumni Association for a raffle to those present. A FSU hockey jersey was donated and was also raffled. Karen received several leads for new scholarships during this presentation.
2. Thapa reported about two or three renewed or new scholarships.
3. John outlined that most of the meetings leading up to the presentation were held by conference call. In spite of not being on the Conference agenda, there was a decent turnout and it went well. We will try to be better coordinated next year and will get on the Conference agenda ahead of time.

D. Emerging Technologies

1. Bob Burtch reported that he had attended the ASPRS Conference in Fort Worth. Bob believes that the Surveying community isn’t getting the state of the art information that it should be – better information is being presented at these type of national conferences than is being given to the MSPS or NSPS conferences. There were great presentations of laser scanning, Geiger lydar, photon lydar, etc.
2. Sanchit reported about working in the mapping side of the industry. “HAD” Maps, or Highway Automated Driving Maps are becoming a big issue in the mapping industry. Drones need to know 3D infrastructure obstacles.
3. Sagar expressed the desire to have FSU professors attending more national conferences to obtain the new emerging technologies in order to pass this information on to the students. UAV technology is gaining momentum – we need to pursue this but there is more to this than just pushing buttons.
4. Mike spoke about a “Dimensions” conference that is held in November that incorporates Surveying, Photogrammetry, Math, Physics and Geodesy. This would be a good opportunity for FSU students.
5. Matt mentioned that the Trimble based “Dimensions” and the Leica based “Hexagons” are both new emerging technologies and they have significant events for looking forward in this profession.
6. Gabor asked Rick Mushing and Sanchit Agarwal what math backgrounds they are looking for in a graduate. They both suggested that a math background is vital, and programming/coding is a huge positive.
7. Mike added that 7th graders are already looking at colleges and related programs, as well as STEM programs, robots, and machine control.
8. Rick Mushing also added that 5th graders are seeing 3-D printing and it is a big hit.

VII. PROGRAM REPORTS

E. Enrollment and Retention Numbers, NCEES

1. Dr. Thapa reported that enrollment as of 9/15, there were 76 students in the program. 500 – 800 letters used to be sent each year to undecided Pharmacy and Optometry students. This practice was discontinued. The program recently got two Architectural students transfers, and he is working to build on this.
2. The NCEES has a \$10,000 award available to College programs which is likely to be awarded, and can be used for any program need.
3. Sagar reported that he keeps track of the letters that are sent out, but believes emails may be more effective.
4. Matt would like to have feedback from students indicating WHY they came to the program.
5. Dr. Thapa broke the students down to (10) Seniors, (24) Juniors, (17) Sophomores, and (25) Freshmen.
6. Bob Burtch read of a National level committee that included SAGES, regarding the rebranding of Surveying. John will look into this with MSPS.
7. It was noted that there will be (11) graduates this year – enrollment is trending up. Matt noted that his graduating class of 1995 was (32) students, (1) of which is a P.E.

F. Faculty Grant, ASPRS Conference

1. Sagar reported that the School applied for and received a grant for research. There was a good inclusion of students. There was a \$2,000 student scholarship and a \$4,000 research grant. FSU was represented at the ASPRS Conference.

G. Capstone 2016

1. Gabor outlined the 2016 Capstones to be presented this afternoon.
2. Rick Sauve stressed the quality of the FSU Grads – 100% employment with numerous job offers – there is no need for the students to look for jobs as there are numerous firms coming to FSU looking for the students.
3. Mike spoke about the need for honesty in salary reporting. A question about ownership of this kind of data was raised and discussed.

H. Capstone 2016

1. Carl reported about the recent presentation by (10) students on the fusion of data sets at a Harbor in Traverse City where a 3-D model was created and plotted on a 3-D plotter. Looking forward to 2017, they are planning a 3-D project of the University Center.
2. Don expressed an interest in getting a video of the presentation to take to students in Lansing area schools.
Carl suggested videoing the 2017 MSPS presentation, then having it edited and making it into an 18-minute video for presentation.

VIII. STUDENT REPORTS

- I. Don reported on the elements of the student session from Thursday evening. There were five students in attendance, (1) Freshman, (2) Sophomores, and (2) Juniors. Four Advisory Committee members were also in attendance. Comments from this session included:
- J. The students expressed a strong interest in having drone technology incorporated into the program. Some of the students were able to participate in a recent drone demonstration on campus and can see the benefit of this technology in their futures. They would like to see a Certificate program available to them at Ferris.
- K. There were discussions on the CST levels and exams, and what it can do for students.
- L. It was noted that there are still a few software licensing issues, but things are much better than previously.
- M. The students expressed an interest in attending National Conferences that have more technological advances & ideas than they can get at the MSPS conference.
- N. All of the students expressed their appreciation for the “Super Computers” that were funded from the Advisory Committee members.
- O. Individual student comments were generally positive and included that the program was very good, and it was good to be in a program where most everyone knows each other and they like all of the professors; The faculty is helpful with any of their struggles; They appreciated the education they are getting and the opportunities that are offered by this program.
- P. Matt questioned what the CST program and exams were all about. John explained the details about the (4) levels and the basics of the program in detail, along with classes/certifications/practices and expectations.
- Q. Sagar talked about the student’s interest in being able to have seats together in certain courses such as math, physics and geology so they could study together and get more out of the course.
- R. Mike spoke about the possibility of Professors offering tutoring help for students.

S. Student Organizations

1. Lambda-Sigma:

Dalton reported the following activities for the year on behalf of Lambda-Sigma:

- a. They updated the display case, including information on Mary Feindt.
- b. A Scholarship workshop was conducted in November.
- c. A Workshop for the FS test was held in January.
- d. The induction ceremony was held in April.

2. Burt and Mullet:

James O’Connor reported the following activities for the year on behalf of Burt and Mullet:

- a. They had a great year of meetings and had guest speakers for every meeting.
- b. Gabor was a big help with all of the organization and activities, and there was great student involvement.
- c. Don questioned whether there was any movement on doing future newsletters.
- d. Carl responded that it should be a faculty level down initiative to make that happen, and that the students don’t have the time to do that – can’t demand this of the students.
- e. Mike commented that he agreed that it is a good communication tool for those graduates that are supporting the students and the program with scholarships.

T. Additional Items:

- 1. The sheet listing Steve Johnson’s comments from the previous meeting was circulated and discussed.
- 2. Karen Lerew was introduced, and she discussed the “Ferris Futures” fund details and how this would work to endow new scholarships.

IX. NEW BUSINESS:

U. Role of the Advisory Committee:

1. **Professor Carl Shangraw read the following** to the Advisory Committee:

"I wish to sincerely thank you all for your very significant contributions to this program. Those contributions have taken on many forms over many years. You have provided leadership, insight, help and assistance in ways too many to count. This morning I wish to address one and only one of those many services you have provided, that of your positions on our advisory committee."

"In your packets are copies of the Advisory Committee Handbook. Using that as a guide, we as a faculty, having the primary responsibility for the education of our students, have developed these policies for its implementation."

2. **The purpose** of the advisory committee is to provide information and advice regarding:
 - a. Current employment needs and opportunities
 - b. New technology
 - c. Emerging skill needs
 - d. Relevance of programs and/or courses being offered
 - e. Planning, development and review of the Surveying Engineering/Technology programs
3. **Membership**
 - a. Potential members are nominated by individual program faculty members who provide a single page brief justifying the nomination along with a detailed resume of the candidate.
 - b. The nomination is voted upon by program faculty and if the candidate receives a majority vote his/her name is submitted through administrative channels for final approval.
 - c. Financial support, scholarship funding and membership on the advisory committee are totally separate and distinct issues.
 - d. Members serve for three year terms renewable upon the desires of the individual member and the majority vote of the faculty.
4. **Meetings**
 - a. Scheduled meetings of the advisory committee are held at least once, not more than twice each academic year. A second meeting during a single academic year proposed by the advisory committee is subject to a majority vote of the faculty.
 - b. Advisory committee meetings shall have a maximum duration of four hours to include regularly scheduled break periods.
 - c. An advisory committee meeting held during the Fall semester shall begin no earlier than 10:00 AM and end no later than 3:00 PM. There will be a one hour non-working lunch break.
 - d. An advisory committee meeting held during the Spring semester will normally be scheduled in conjunction with other activities such as scholarship and capstone project presentations. If that is the case, the advisory committee meeting shall begin no earlier than 8:00 AM and shall end no later than 11:45 AM. Meetings will not be reconvened at a later time. If not held in conjunction with other activities, the Spring meeting schedule shall follow the Fall meeting schedule.
5. **Minutes/Agendas/Reports**
 - a. Draft advisory committee meeting minutes shall be completed and delivered to meeting participants and other interested individuals no later than 10 business days after the meeting is conducted.
 - b. Meeting agenda will be distributed thirty days prior to the scheduled meeting. Subcommittee and individual reports will be submitted to the **Program Coordinator** two weeks prior to the scheduled meeting. The **Program Coordinator** shall compile reports and make general distribution by email one week prior to the scheduled meeting.

- c. Reports shall consist of a single page synopsis containing three paragraphs:
 - i. What was supposed to have been done?
 - ii. What did get done?
 - iii. What's the plan for the future?
6. **Meetings** are meetings, not symposia, colloquiums or work sessions. Business is conducted, reports are reviewed, initiatives are proposed, and decisions are made. Faculty reserve the right to implement all, some or none of the suggestions proposed by the advisory committee.
7. **These policies** take immediate effect. There are six of you whose terms expire at the end of this semester. If you are interested in being considered for a term extension or if you no longer wish to serve on this committee, please email Debbie Dawson with your intentions by close of business, Wednesday, April 27, 2016. All requests for extension will be considered endorsements of these policies.
8. Carl then said *"Thank you for your service"*.
9. Considerable **discussion followed**.
10. Dr. Thapa outlined that the Mechanical Engineering Technology program has 260 students and 5 faculty members. Comparing those numbers to our program, we need to justify the program. This Committee has no right to evaluate the faculty. Anyone given an Honorary Doctoral Degree, it is honorary, not a Ph.D.
11. Bob Burtch asked who the six members are whose terms are expiring: They are Don Lowell, John Fenn, Matt Nawrocki, Mike Stanoikovich, Rick Sauve, and Steve Johnson.
12. Mike spoke about the impact that this group has made, and feels that this is a good and helping group.
13. Don asked about the absence of anything said about the student interviews that are held the evening before, whether that should be continued. It was suggested that this should continue.
14. Next Advisory Committee Meeting date and time: September 23, 2016 at 10:00 AM
15. Mike requested clarification on aspects of the new Handbook. He requested input and clarity from faculty. Carl agreed.

V. Steve Johnson's notes were reviewed and discussed.

W. ABET Discussion

1. Dr. Thapa discussed preparation for the 2017 ABET accreditation review/re-accreditation, and suggested that the Advisory Committee member's presence at that meeting would be appreciated. That would include Committee members showing up for this meeting with ABET. A Monday visit would include a luncheon and ability to talk with the ABET Board.

X. Exit Interviews

1. John asked about the exit interview/questionnaire.
2. Carl agreed that the approved format should be implemented now.
3. The form should be emailed to Dr. Thapa for his use in facilitating exit interviews.

X. ROUNTABLE:

Don: This is all about the students. At the end of the day, I hope it still is, and that we all keep our focus on them.

Sagar: Thank you for everyone here. This is my 4th year here and everything is getting better.

Jeff: This is my first meeting, and I'm happy to be a part of the group.

Paul: I'm proud to be a part of the Committee. This Committee has made great strides over the years. I appreciated meeting with the students and getting their feedback.

Dr. Thapa: I appreciate the support of all of the Committee members. We do make a difference in the lives of the students.

Brian: This is my first meeting. Very interesting. Thank you.

Sanchit: This is my third meeting. I'm just looking for ways that I can help more.

Matt: Welcome to the new members. It is fulfilling to be on the Committee. It is all about the students –that's why we're here.

James: Thank you.

Gabor: Thank you for coming. I try to take everyone's input into consideration.

Rick Sauve: Congrats to Gabor for passing the P.S. exam. Looking forward to Sagar passing the exam with help from everyone here.

Karen: Thank you all for your support.

Rick Mushing: Being part of the Committee inspires confidence in talking with others in the teaching community.

Dalton: Thank you for all you do to contribute to the students and their education.

Carl: I appreciate all that the Committee members do to help with the transformation of incoming students into graduating seniors.

Michelle: This has been eye opening and beneficial. I'm looking forward to seeing the changes to come.

Bob: This is important to serve on this Committee.

Mike: Congrats to the graduating seniors. I look forward to seeing a waiting list for the program, and I still reminisce about my years at Ferris. Seniors should enjoy their time here. Can't stress enough the prominence of the Ferris Surveying/Engineering graduates worldwide. Embrace conflicts and resolve them.

John: All on this committee need to be committed to fulfilling committee obligations. Faculty, Debbie, John, and Don are willing to sit in on conference calls as necessary.

XI. ADJOURNMENT

Motion to adjourn was made by John, seconded by Mike. Adjourned the meeting at 11:50 AM.

Minutes submitted by Don Lowell.