Construction Management
Department of Technology

Student Outcome & Program Assessment

Annual Assessment Report

Fall 2004-Spring 2005

INTRODUCTION

This is the ninth year for our assessment plan. It has provided direction and has helped us to focus on what and how to assess student and program outcomes. The assessment instruments have had minor revisions and editing over the nine years. As a whole, the instruments are collecting the needed information and providing us with the necessary feedback to achieve our student and program goals and objectives.

OVERVIEW OF THE ASSESSMENT PROCESS

1. The assessment plan meets ACCE accreditation and MSUM requirements. CM Program goals support the MSUM mission statement and goals for the College of Business.
2. CM Program goals and objectives are based on, and coordinated with, the Five-Year Plan, which is updated by the Advisory Board.
3. The Assessment plan has two levels: Student Outcomes Assessment and Program Assessment.
   - Level I – Student Outcomes Assessment
     Direct measures of student outcomes/performance include the CPC exam, Capstone Experience Evaluation, and Internship Evaluation.
     Indirect measures of student outcomes/performance include the Alumni and Employer Surveys.
   - Level II – Program Assessment
     Assessment Measures include Maintaining ACCE Accreditation, Enrollment, MSUM Graduate Application & Senior Exit Survey, Construction Program Senior Exit Survey, Graduate Placement, Alumni and Employer Surveys, and input from the Advisory Board.
4. Assessment Schedule has been developed to keep the process on schedule.
5. Assessment Follow-up Process completes the feedback loop to access whether the changes have had an impact.

SUMMARY OF ASSESSMENT

Goal # 1
Maintain a comprehensive quality construction management curriculum that blends the fundamentals of construction management, business management, and engineering concepts.

- **CPC Examination**

  Fall 2004: 7/9 passed the CPC. The scores of those who passed ranged from 257/300 to 225/300. The average score for our students was 232.67. The passing score was 210, and the national average was 214.39. The scores of those who did not pass ranged from 202/300 to 199/300. In all ten areas, the scores were above

the national average. This is the first time that we did not have any area indicated as a weakness. As a whole, the students indicated that they wanted to pass the exam and made an effort to do so. Academically, all of these students should have passed the exam. There were two students who did not really make an effort and showed weaknesses in most of the areas.

Spring 2005: 19/27 students passed the CPC. Passing scores ranged from 261/300 to 211/300. The average score for our students was 221.33. The passing score was 210, and the national average was213.58. The scores of those who did not pass ranged from 202/300 to 174/300. . In seven of the ten areas, the scores were at, or above, the national average. Four of the students who passed did not have any area indicated as a weakness. Half of the students were academically superior students. This is the third semester that we required the students to buy the Red Vector online study guide. Indications are that this was helpful. We will continue to monitor this over the next few tests.

Over the past three years, the curriculum has been revised to meet the new ACCE standards. The CPC results will be monitored to evaluate the impact of the revisions on the test scores. We will continue to monitor the exam results. The major obstacle is to convince the students to prepare and take the exam seriously.

One student, who did not pass in the fall, retook the exam and passed. We will continue to encourage the students who fail to repeat the exam. The Red Vector online study guide is available to the students for a full year. We are hopeful that this will be an incentive to sit for the exam again.

- **Capstone Evaluation**

The Capstone evaluation is tied to the ten student outcomes under this goal. This academic year was the first time that the Capstone project was completed in teams of two. Fall semester provided the instructor the opportunity to convert to teams and evaluate the projects accordingly. Team projects have become essential because of the increase in class enrollment. Spring semester there were 28 students. Even with teams of two, meant that the instructor had to monitor and grade 14 major projects. As the class size increases, the team size will increase unless multiple sections are offered.

The fall results were fairly consistent with the CPC results. Of the ten areas that were evaluated, the students as a whole scored an average of 88 percent on the Capstone evaluation. These results are also consistent with overall class performance.

The spring results of the Capstone evaluation were consistent with the results of the CPC. 4/12 teams produced exceptional projects, and all of these team members passed the CPC. An analysis of the other teams indicated, in several cases, that there was one member who passed and one who did not. It appears

that the team composition will impact the Capstone project but will have very little impact on the CPC scores. The average score on the final project submittal was 91 percent. This group of students was very committed to presenting their project in a professional manner. This was reflected in their course grade. In addition, 10/25 students had participated on a competition team. This has a direct impact on the quality of the project and the professional manner in which the project is completed.

The Capstone evaluations from both semesters indicated the students could demonstrate competence in all of the ten areas addressed in the project. The results were also consistent with the Graduate Exit Survey in which the students rate themselves in each of the ten areas.

- Internship Evaluation

  Overall, the employers rated the interns above average in each of the areas assessed. The majority of the interns had an opportunity to engage in estimating or scheduling. Most of the students were involved in the project administrative processes for the projects. The comments suggest that the employers were very satisfied with the students and felt that they were very well prepared. The overall scores were similar to past scores. Scores on the ten items vary with the type of construction and the project. The depth and breadth of the intern experiences is dependent on the project.

  We are continuing to monitor comments from employers on surveying and building layout. This is the area on the CPC exam where the students have scored below average. We are trying to determine what changes need to be made in Eng. 200, Surveying, to better prepare our students for the CPC exam. In addition, we will monitor comments on building layout and plan reading to determine if the comments are specific to this group or if a trend is beginning to surface.

  We will continue to compare the Internship, Capstone and CPC summary evaluations. Looking across these reports provides us with indicators that reflect the results of curriculum and course content changes.

- **Graduate Exit Survey**

  Overall the results suggest that the students are pleased with the experience that they have had in the CM program and at MSUM. They do indicate that computer facilities and access are a big concern. This group indicated that the CM Society needed to be more active and provide more learning experiences for the students. All of the written comments were positive and complemented the efforts of the CM faculty and the program. Over all, the results were consistent with the CPC and the Capstone results.

Results indicated that the students felt they were competent in all ten areas. They indicated that they felt prepared in all ten areas. The survey results are consistent with the Capstone projects and the CPC. Based on the survey results, one would have expected more students to pass the CPC exam. The findings support the fact that the attitude toward taking the exam is a major factor in the exam scores. A feed back loop has been created to monitor this problem.

- **CM Alumni Survey**

  Alumni surveys were not completed. We are in the process of developing a database and converting these surveys to an electronic format. It is our hope that this conversion will provide a larger return of Alumni surveys.

- **Maintain ACCE Accreditation**

  The Construction Management program had an ACCE accreditation visit in April 2004. The program was reaccredited for six years with a one and three-year report.

  The first year report was submitted and accepted without reservation. It is included with the assessment report.

Goal # 2
Increase the number of Construction Management majors to 100 students over a five-year period (2000-2004).

- Monitor Enrollment

  Based on the official class lists, it appears the CM program has reached an enrollment of over 134 majors. Fall 2004, we had 122 majors, with the majority of the students being external transfers. Fall 2005, there are twice as many freshmen as there were in academic year 2004-2005. A summary of enrollment data, including data about external transfers, is attached to this report.

  A long-term goal of the CM program was to grow to approximately 120 majors and three full-time faculty members, plus required adjunct. The five-year plan reflected a growth to 134 majors by the fall of 2005. We are considerably ahead of schedule in our attempt to reach 120 majors.

  The faculty visited St. Cloud Tech and North Dakota State College of Science. There were not as many transfers from these schools for Fall 2005 as there had been in the past. We have an excellent relationship with St. Cloud and NDSCS. We work closely with the faculty at these institutions on advising students. The students feel very comfortable calling and checking with us about a course that

may, or may not, transfer. Formal articulation agreements with both schools have been completed.

The CM faculty did not change recruiting efforts this past year. The faculty did not have time this year to recruit from local high schools. However, there were more freshmen this year than ever before. The faculty intends to monitor the retention of these students. The program is growing without recruiting incoming freshmen. Until there is an additional faculty member, the current faculty does not have the time to recruit from the area high schools.

Enrollment data included.

Goal # 3
Enhance faculty teaching effectiveness and professional development.

- **Graduate Exit Survey**
  The results indicate that students perceive the teaching to be well above average. They also stated that the faculty was helpful and supportive in their learning experiences and in their job searches.

- **Tenure and Promotion**
  Faculty submitted Professional Development plans and annual reports, as required. Each faculty member received excellent reviews.

  Scott Setlveit received ASC Teacher of the Year for 2005.

Goal # 4
Update and maintain the physical facilities and lab equipment.

- **Advisory Committee**
  The Hagen Hall remodel is underway and scheduled for completion by fall 2006. The Dean has indicated there will be approximately $50,000.00 available for new lab. Equipment.

- **Graduate Exit Survey**
  Results indicate that the students need more time available in the computer lab. This is an ongoing problem that the Department is addressing. This demand will continue to increase, because of the increase in students, we already offer two sections of Planning and Scheduling, Estimating II, and Project Control. In addition, the Capstone course will soon be at the point that it will need to be two sections in spring semesters. The Department tries to schedule open lab time in the evenings and on weekends.

  In order to get new machines in HA 205, the lab was converted to an open lab during summer 2003. Due to the remodel, this lab is currently located in HA 102.

Information Technology currently services the lab. We were able to add more computers in HA 116, which will have construction specific software on them. These machines are old and need to be replaced.

- **Laptop Initiative**
  The Construction Management program will be requiring laptop computers starting fall semester 2007. All junior and senior CM majors will be required to purchase and utilize laptop computers in their CM coursework. The CM laptop initiative will be completed in three stages:
  1. Fall 2006 – The CM server will be operational, and students will utilize the existing computer lab.
  2. Fall 2007 – All CM students beginning their third year of their CM coursework will be required to purchase laptops. (Hagen Hall remodeling project complete)
  3. Fall 2008 – Laptops will be required for all third and fourth year CM coursework.

Goal # 5
Increase resources and support for the CM program.

- **Advisory Committee and CM Faculty**
  No action since the last Advisory Board meeting.

- **Graduate Exit Survey**
  The results indicate the need for increased lab facilities to be available 24 hours a day. The students can now have their ID coded so they can enter the building after hours and access the labs.

- **Department Data and Reports**
  We are tracking the students who are receiving scholarships and the source of the scholarships. There has been an increase in the number of scholarships received from construction companies. Companies are giving scholarships to the students who intern with them. See attached lists.

  We are tracking field trips and guest speakers. This has increased over the past year, and we are doing a better job of documenting this. One area that we need to work on is encouraging the CM Society to organize more field trips and speakers.