

Minnesota State University Moorhead
2007-2008 Accredited Programs Cover Sheet

(An electronic version of this form can be accessed at <http://www.mnstate.edu/assess>)

Note: Accredited programs will complete this form each year.

Degree Program: Construction Management

Department: Technology

College: Business & Industry

Date: 5-16-07

1. Name(s) of Department Assessment Coordinator and/or Assessment Committee Members

Assessment Coordinator: Dr. Norma Andersen

2. List of All Student Learning Outcomes. (List and number all outcomes, placing an asterisk (*) by any outcomes that are new or that have been revised since last year.)

No changes to Student Outcomes

1. Communication skills: The student can apply oral, written, graphic and, listening skills to enhance the communication process.
2. Design/Engineering Concepts and Associated Math: The student will apply scientific knowledge to applications of applied mechanics, engineering design fundamentals, and associated mathematics to the construction practices and processes.
3. Management Concepts & Philosophies: The student can apply the principles and philosophy of general and human resource management systems, accounting, economics and ethics to the construction industry. (Including team building, leadership concepts/skills, and the Construction Code of Conduct).
4. Construction Materials and Methods:
The student can demonstrate knowledge of the science of materials and methods of construction as they apply to the 16 Construction Specifications Institute (CSI) Divisions designated for the construction industry.
5. Estimating, Plan Reading and Bid Process: The student can demonstrate estimating skills including interpreting plans, construction documents, performing quantity take-offs, analyzing productivity and pricing, identifying appropriate codes, identifying site conditions, applying value engineering, and developing detailed project proposals and documentation necessary for construction job acquisition and completion.

6. **Budgeting/Cost Accounting, Cost Control & Close-out:** The student can prepare complete cost control processes including the ability to establish a budget, develop a work breakdown structure, prepare cost reports, and forecast expenditures at completion of the project.
7. **Scheduling & Project Control:** The student can prepare a complete construction project schedule showing the logical sequence of activities and time duration, develop a procurement time table, and establish a project plan in order to monitor progress and update the schedules
8. **Safety:** The student can identify and execute construction safety standards including the ability to interpret the OSHA construction standards, establish safety and health procedures on the job site, perform hazard material and process analysis and enforce safety procedures.
9. **Construction Surveying and Layout:** The student will be able to establish procedures for identifying distance and elevations from know points and layout the project in accordance with the design drawings, and site information.
10. **Project Administration:** The student will demonstrate knowledge of overall field administration at the construction site including developing a site plan, evaluating vendors and subcontractors, processing payment applications, maintaining field records such as purchase orders, change orders subcontract agreements, shop drawings, as-built drawings, daily job reports, and construction reports.

3. Name of accrediting agency/organization: American Council for Construction Education (ACCE)

4. Do you have a report due this year to your accrediting agency? Yes No
(Whenever your program reports assessment information to your accrediting agency, you are required to submit the same information to SLOAC. If you have a report due this year, attach document to this form or submit report when it is submitted to your accrediting agency. Use whatever format is used for your accrediting agency.)

5. Date of most recent report to accrediting agency: 5-14-07

6. Date of next report to accrediting agency: Dec. 15, 2009

7. Describe any changes to your program's assessment plan or procedures that you intend to make this year.

None

If you received a grant in the previous two years, provide a summary of how the grant was used and results, when available, for the outcome the grant targeted.

8. Signatures

Department Chair or Program Director

Dean or Director

Required Attachments:

1. If applicable, records of department meetings where changes to student learning outcomes or assessment planning was discussed and approved.
2. If applicable, copy of report of assessment information that has been submitted to accrediting agency.

**Construction Management
Department of Technology**

Student Outcome & Program Assessment

Annual Assessment Report

Fall 2005-Spring 2006-Fall 2006

INTRODUCTION

This is the tenth year for our assessment process. It has provided direction and has helped us to focus on what and how to assess student and program outcomes. The Plan has been revised as of March 2007 to reflect the Strategic Plan 2005-2010. The assessment instruments have had minor revisions and editing over the ten 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.
2. CM program goals support the MSUM mission statement and goals for the College 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 and 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 assess whether the changes have had an impact.

SUMMARY OF ASSESSMENT

Goal # 1

Provide a quality Construction Management program.

Implement a Continuous Improvement Plan to enhance quality construction management curriculum that blends the fundamentals of construction management, business management, and engineering concepts

- **CPC Examination**

Fall 2005: 7/11 passed the CPC. The scores of those who passed ranged from 255/300 to 142/300. The scores of those who did not pass ranged from 207/300 to 142/300. The passing score was 210, and the national average was 212.10. In

all ten areas, all but one of the scores were at, or above, the national average. Four areas were indicated as a weakness. The students who had expressed a desire to pass the exam did so. However, the ones who made it clear they were sitting for the exam just to meet the Capstone course requirement did not pass the exam. There were two students who did not really make an effort and showed weaknesses in most of the areas. The four areas of weakness were Communications, 4/11; Engineering Concepts, 6/1; Bidding and Estimating, 3/11; and Safety, 6/11.

Spring 2006: 14/23 students passed the CPC. Passing scores ranged from 265/300 to 210/300. The scores of those who did not pass ranged from 209/300 to 166/300. The passing score was 210. In seven of the ten areas, the scores were at, or above, the national average. Half of the students in this class were academically superior students. Three of the students who passed did not have any area indicated as a weakness. The three areas of weakness were Engineering Concepts, 15/23; Material & Methods, 10/23; and Safety, 11/23.

Fall 2006 5/10 students passed the CPC. Passing scores ranged from 243/300 to 212/300. The scores of those who did not pass ranged from 209/300 to 170/300. The passing score was 210. The overall performances on the exam this semester were very poor. There was only one area that was at the national average or above.

All students showed a weakness in at least one area. The areas of weakness were Communications, 9/10; Engineering Concepts, 4/10; Management 5/10; Material & Methods, 5/10; Bidding and Estimating 6/10; Budgeting and Cost Control, 7/10; Safety, 6/10; Surveying 4/10; and Project Administration, 2/10. This class indicated that they did not spend any time reviewing the study guide.

Comments on the Results:

In looking over the past three semesters, there are several areas that we will need to monitor. Engineering Concepts and Safety are the two that have been a weakness all three semesters. These three classes said that they felt they could miss all of the questions on Engineering Concepts and still pass. This is true. It is the one area that we do not compare across assessment tools. At this time, there is no clear explanation for the other areas of weaknesses.

When the results were discussed with the students who did not pass, it was clear that there was a lack of motivation to do well on the exam. Students do not see any reason to pass it when employers do not ask about it or even realize that the exam exists. In Capstone, students must sit for the exam in order to complete the course. Bonus points for passing the exam are factored into the grading scheme. If they pass in a high percentile, it is enough to change their grade by one GPA. However, at this time there is no negative consequence to failing the exam.

Summary of Results:

The Capstone evaluation is tied to the ten objectives under this goal.

Looking across all three semesters, the results were fairly consistent with the CPC results. Looking at the ten areas that are evaluated, the students as a whole scored between 85 to 88% on the Capstone evaluation. These results are also consistent with overall class performance.

Comments on the Results:

The Capstone evaluations from all three semesters indicated the students could demonstrate competence in all of the ten areas addressed in the project. Students indicate that time is a factor when they work and are also in the interview process. The basic project has been the same for the last eight years. All groups before had to manage their time and make decisions. There were a number of students who chose not to spend the time necessary to get a higher score. 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**

Summary of Results:

Overall, the results suggest that the students are pleased with the experience that they have had in the CM program and at MSUM. All of the written comments were positive and complemented the efforts of the CM faculty and the program. The Exit Survey indicated that students consistently scored themselves above average on all ten learning outcomes. On a scale of 1-5 with 5 being the highest, they scored s.3.20 to 4.35.

Comments on the Results:

Overall, the results indicated that the students felt they were more competent than the CPC and the Capstone results indicated.

- **CM Alumni Survey**

Alumni surveys were sent out March 28, 2007. Electronic copies were sent to all alumni with email addresses. In addition, hard copies were mailed to all alumni with mailing addresses. Between the two, we hope to receive a large enough response so that the data can be analyzed and compared to the other instruments. The data will be analyzed and reported in the next annual report.

- **Maintain ACCE Accreditation**

The Construction Management program was reaccredited summer 2004 for six years with a one and three-year report.

The first year report was submitted and accepted without reservation. The third year report is due May 2007. The first and third year reports are available upon request.

Goal # 2

Increase the numbers of Construction Management majors to 150 students over a 5-year period (2005-2010).

Monitor Enrollment

Spring 05	122
Fall 05	134
Spring 06	136
Fall 06	128
Spring 07	126

Comments on the Results:

Total CM Enrollment was increasing through Spring Semester of 2006. Enrollment has declined the past two semesters. This could be due to a number of reasons. First, the overall enrollment at the University has decreased. This is primarily due to the declining number of high school graduates in our geographic area. It could also be due to the fact the CM faculty have not had time to market the program as in previous years. The number of both internal and external transfers decreased. Marketing materials were not sent to undeclared majors out as early as they should have been the past two semesters. The CM faculty have not visited or contacted as many two-year construction schools as we would like to due to time constraints.

Another issue that may impact enrollment is the requirement of laptop computers for juniors and seniors in the CM program starting fall semester 2007.

Actions Taken

Send out marketing materials to undeclared majors spring and fall semester of 2007.

Send out marketing letters to two-year construction program coordinators during fall semester 2007.

Goal # 3

Enhance student learning, faculty teaching effectiveness, and professional development.

Summary of Results:

- Develop and Maintain a Process Where Student Learning is Proactive.
 - Courses are being developed on D2L and more writing and presentations are being incorporated into each course.
- Faculty Members to be involved in Sharing Best Practices through Presentations and Publications.
 - Dr. Andersen has published two articles.
- Attend Conventions, Conferences, and Training Opportunities
 - Dr. Andersen has attended ACCE twice a year, completed update training for P3e/c, and spent one summer industry consulting.
 - Dr. Andersen serves as an educator trustee for ACCE and serves on the Long Range Planning and Learning Outcomes committees.
 - Scott Seltviet has become very active in ASC at the regional level and now serves the Regional Director and is on the ASC Board of Directors.
 - Scott Seltviet was named ASC Outstanding Educator in 2005 and was given the Excellence in Teaching Award by MSUM.

- Bring Industry into the Classroom

- We are utilizing more industry guests in our classes. Classes have utilized the construction projects on campus for field trips as well as others in the community.
- There continues to be excellent student participation at the Informational Meetings when companies come to recruit.
- The new Professional Growth Class, CM 205, was developed to promote industry involvement. It is beginning to have an impact.
- Tenure and Promotion
 - Faculty submitted Professional Development plans and annual reports as required. Each faculty member received excellent reviews.
- Graduate Exit Survey
 - The results indicate that students perceive the teaching to be well above average. They also stated the faculty was helpful and supporting in their learning experiences and in their job searches.

Comments on the Results:

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. All of the written comments were positive and complimented the efforts of the CM faculty and the program.

Scott and Norma will continue to monitor student evaluations.

Goal # 4

Raise a Minimum of \$50,000 per year from outside sources.

Summary of Results: No measurement has occurred to date. At the end of the MSUM fiscal year (June 30, 2007), the CM program coordinator will summarize gifts from the past year and report to the Advisory Board.

Comments on the Results:

There are no results to comment on at this time.