Construction Programs

APRC 1998-1999

section 1 of 3

Ferris State University
College of Technology
Construction and Facilities Department

ACADEMIC PROGRAM REVIEW REPORT

AAS, Building Construction Technology
AAS, Civil Engineering Technology
BS, Construction Management

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September, 1998

ACADEMIC PROGRAM REVIEW REPORT
BCT AAS, CET AAS and CM BS

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SECTION 1
Overview

Ferris State University has offered construction-related education for over 50 years. Initial programming began at the associate degree level with HVACR Technology in 1945, adding Architectural Technology in 1954, Surveying Technology in 1958, Highway Technology (later Construction Engineering Technology and now Civil Engineering Technology) in 1960 and Building Construction Technology in 1968. Baccalaureate programming began in 1973 with Surveying (now Surveying Engineering), adding Construction Management in 1981, HVACR Engineering Technology in 1984 and Facilities Management in 1989.

The AAS Building Construction Technology (BCT AAS), AAS Civil Engineering Technology (CET AAS) and the BS Construction Management (CM BS) make up a program area commonly referred to as "Construction Technology and Management." There are four courses that differentiate the BCT AAS and the CET AAS degrees and define the Commercial/Industrial and the Highway/Bridge tracks in the CM BS. Both AAS degrees ladder directly into the CM BS degree. Entering freshmen have the option of declaring themselves as BS candidates at the onset. Transfer students are placed in the programs according to their desires and their transfer credits and degree(s) from other institutions.

In addition to on-campus programming, the CM BS has been offered at the Grand Rapids Applied Technology Center (ATC) since 1989. ATC students can also enroll in three construction management certificate programs.

This report includes the academic program review of the BCT AAS, CET AAS and CM BS degree programs. Each program is viewed as a separate entity, but at the same time is viewed as part of a closely interrelated program area. This relationship is apparent in the mission statement adopted by the faculty:

> The mission of the Construction Technology and Management programs is to educate students in Building Construction Technology, Civil Engineering Technology and Construction Management through a broad based foundation of appropriate technical and general education courses that will provide them with highly competitive skills and knowledge, construction related employment at graduation and the potential for advancement in their careers.

The technical, technological and career-oriented nature of the three programs is very much in accord with and in support of the university mission. The success of the graduates in attaining employment in their industry at competitive salaries, in demonstrating their skills and knowledge and in attaining advanced levels of responsibility all point to the success of the programs.

The CM BS was initially accredited by the American Council for Construction Education (ACCE) in 1993. The program wrote a self-study and underwent a site visit in 1997, and in March 1998 was granted reaccreditation for six years. The two AAS programs, while an integral part of the BS degree, are not accredited. This is due primarily to added costs and to an ACCE requirement for business and management courses in the AAS. The faculty feel that these courses are inappropriate for a terminal, two-year degree with the limited number of credits available in the degree.

There are over 170 BS Construction Management and similar programs in the United States. Many of these are in the Construction Engineering/Construction Engineering Technology realm, and are often accredited by the Accreditation Board for Engineering and Technology (ABET). Over the past twenty-five years, construction management has emerged as a discipline separate and distinct from construction engineering. Basically, engineering programs include higher mathematics and its use in science and engineering courses, and a heavy design component. Construction management programs focus heavily on practical applications of theory and basic principles, and include a heavy business and management component. The ACCE was formed by construction industry contractors in recognition of the uniqueness of construction education and their needs for qualified construction graduates. There are 45 ACCE accredited programs nationwide, including Ferris's. There are four construction management programs in Michigan: Ferris, Northern Michigan University, Michigan State University and Eastern Michigan University. Other than the Ferris program, only Eastern Michigan's is accredited, although Michigan State's program is in candidate status.

The programs are taught by a group of eight faculty. Faculty resumes are contained in Volume II of the ACCE CM Program Self-Study provided separately. A brief list of the faculty, their credentials and date of initial employment follows:

Professor Edward M. Brayton, MS, CPC	1980
Associate Professor Robert C. Eastley, MS, PE	1982
Associate Professor David J. Hanna, MS, PE	1991
Assistant Professor John L. Moore, MS, PE	1990
Assistant Professor Kenneth L. Reinink, BS	1982
Associate Professor John R. Schmidt, PhD	1997
Assistant Professor Kelly A. Seitter, BS, PE	1998
Assistant Professor Lee F. Templin, MS, PE	1996

The faculty group is a well-balanced mix of longevity and newness. All faculty have strong industry experience. The faculty was cited as a programmatic strength in the ACCE reaccreditation visiting team report. Turnover in recent years has been a faculty member moving to the department head position, a resignation due to the spouse's transfer, and two resignations to take faculty positions at other institutions.

The program students are a diverse group. Many have strong construction related work experience and have a well-founded appreciation for the value of their education. The programs have had a number of students come from family owned and operated construction firms. The Associated Construction Students is an active student organization, affiliated with the Associated General Contractors of America, Associated Builders and Contractors, Michigan Asphalt Paving Association, Construction Management Association of America, National Association of Minority Contractors, and National Association of Home Builders.

The program students were cited as a programmatic strength in the ACCE reaccreditation visiting team report.

The programs have excellent relationships with various industry associations and companies, whose contributions include monetary support, student awards, scholarships, summer internship programs, publicity, distributing student resumes, and field trips.

The programs, especially the CET AAS and the CM BS Highway/Bridge track, also have a strong association with the Institute for Construction Education and Training (ICET). The ICET is administered out of the Construction and Facilities Department office, and provides training, education, certification and qualification programs for about 600 members of the Michigan aggregate and bituminous paving industries annually. Two of the program faculty actively participate in the offerings of the ICET. All CET AAS and CM BS Highway/Bridge track students have the opportunity to earn certification as both aggregate and bituminous technicians at no cost. Certification is a distinct advantage in obtaining employment, since certification normally costs the employer $550 per course plus wages and travel expenses. Through the industry support activities of the ICET, considerable materials testing equipment is available to the programs, including a recently acquired $25,000 bituminous gyratory compactor.

SECTION 2
Graduate Survey Results

The following is a summary of the results of the Graduate Survey. The survey was conducted as part of a much larger effort to prepare for the Ferris State University's Program Review process. The following information was collected and compiled by Dr. John R. Schmidt.

Survey Format

The survey was prepared with input from the general program faculty. The final form of the survey was a two page (front and back) tri-fold sheet. A cover sheet was personally addressed from a hybrid database such that it would properly fit into a windowed envelope. The pre-addressed cover letters and the final survey form were taken to the FSU Copy Center where they were combined and stuffed into the windowed envelopes. An example cover letter and blank survey form are attached in Appendix B.

Graduate Database

Recent changes to the program produced a Bachelor of Science (BS) track, which could be entered directly in the freshman year. Prior to this change, the BS degree program was entered upon completion of the Associates degree (AAS) in Building Construction Technology (BCT) or Civil Engineering Technology (CET). Understanding this change had taken place in Fall 1993, the database chosen for this effort included those graduates of the programs since 1994.

Construction of the database was a bit more difficult. While the Department Head had kept a database of graduates, which contained names, degrees, and some employment information, such information is only a snapshot in time. That is, the information was good when posted but may not have been current. To this end, the university's Alumni Relations was contacted to share any information that they may have had on file. Ultimately, a combination of the two databases was prepared. Additional effort by the researcher to locate addresses of individuals or their businesses via the Internet completed the preparation.

Overall Statistics

Total Surveys Mailed:	159*
Undeliverable - Returned to Sender:	8
Assumed Delivered:	151
Returned:	53
Response Rate:	35%

(* Represents the number of graduates for which addresses could be ascertained.)

Additional Education

16 of the respondents (30%) had completed other degree programs before coming to any of the construction programs.

One respondent continued his education after completing his construction program. This particular individual completed his BS in Business at Ferris State in the same year as he completed his BS in Construction Management.

Initial Salary Range:

Respondents were asked to indicate their initial salary range based upon the construction degree that led to their initial employment. The following distribution was observed for all graduates.

Initial Salary Range	AAS	BS
Less than $20,000	0	0
$20,000 to $25,000	2	4
$25,000 to $30,000	4	16
$30,000 to $35,000	2	12
$35,000 to $40,000	1	5
$40,000 to $45,000	0	4
$45,000 to $50,000	0	0
More than $50,000	2	0
Total Responding to Question:	11	41
(Number Not Responding to Question:)	1	

Average initial salaries for all graduates were in the range of $25,000 to $30,000.

Current Salary Range:

Respondents were asked to indicate their current salary range. The following distribution was observed.

Current Salary Range	All Degrees
Less than $20,000	1
$20,000 to $25,000	2
$25,000 to $30,000	4
$30,000 to $35,000	14
$35,000 to $40,000	11
$40,000 to $45,000	13
$45,000 to $50,000	4
More than $50,000	4
Total Responding to Question:	53
(Number Not Responding to Question:)	0

Average initial salaries for all graduates were in the range of $35,000 to $40,000.

Salary Progression:

Correlation of salaries is difficult due to several factors. On one hand, some students are nontraditional, have much more experience than others, or may actually be employed in a relative's or their own business. In other words, they have a job waiting for them upon graduation. Their education is a chance to improve their performance or attain a higher level within the company. On the other hand, many are first-time-construction employees. These graduates will generally start at the bottom and work their way up. In addition, many of our students have prior degrees in such areas as technology, business, real estate and the like – demanding more compensation upon graduation.

A chart illustrating salary progression is provided at the end of this section.

Career Avenue:

The following illustrates the present track of respondents' careers. Three-quarters (75%) of all respondents are currently practicing as Construction or Project Managers, participate in company management, or own their own companies. The fact that most have moved into such positions of authority is an indication of the success of the Ferris Construction programs.

A chart illustrating the distribution of graduates in the various career tracks appears at the end of this section.

Program Topics – Career Relevance versus Preparation

The survey listed topics typically covered throughout a student's academic career. Each topic has a particular level of relevance for each degree program. Many of these topics are explicitly covered (i.e., a course specifically details the information). Others are implicitly covered (i.e., related material is included in one or more courses). The average responses to the evaluation of Relevance and Preparation (Survey Question F) are attached. In summary:

- Average Rate of Relevance: 3.8
- Average Rate of Preparation: 3.5

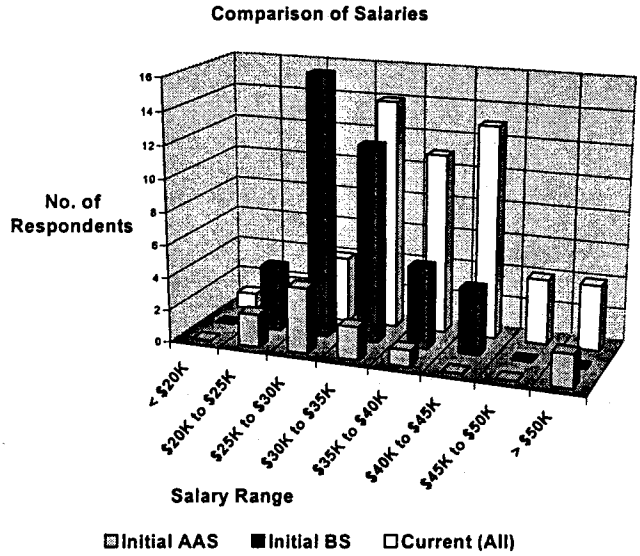
This indicates that on a whole, the graduates of the construction programs rated the preparation that they received for their career in fairly proportionate level with their needs. (Ratings of Relevance fall in the range between *Important* {4} and *Relevant* {3}. Ratings of Preparation fall in the range *between Well Prepared* {4} and *Fairly Prepared* {3}.)

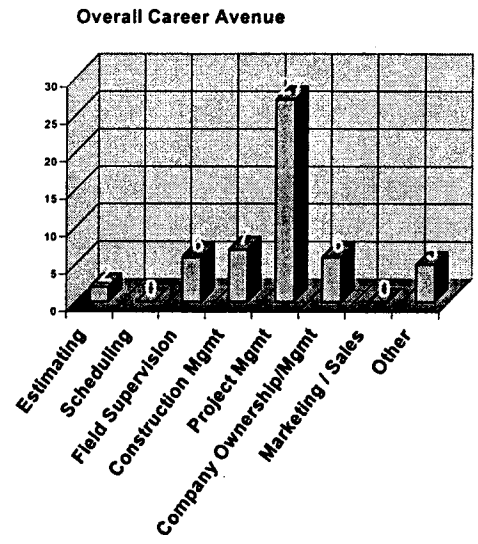
Other observations:

- Topics where less than 50% of respondents rated Preparation met or exceeded the level of Relevance:
  - Oral Communications 26%
  - Written Communication 40%
  - Mechanical & Electrical Systems 33%

As the reader may notice, these topics are common to each of the three program groups. This comparison of rating of Preparation versus Relevance may serve as an indication that the graduates felt that they were not prepared to a level that matched the need. As an example, 74% of the respondents rated the Relevance of Oral Communication to their career at a level that exceed the rating they gave the Preparation that they received at FSU.

- Topics where 80% or more of respondents rated Preparation met or exceeded the level of Relevance:
  - Highway Technology 88%
  - Hydraulics & Hydrology 84%
  - Materials Properties & Testing 80%





Building Construction Technology Program (AAS)

Total Surveys Mailed:	75*
Undeliverable - Returned to Sender:	3
Assumed Delivered:	72
Returned:	29
Response Rate:	40%

(* Represents the number of graduates for which addresses could be ascertained.)

Additional Education

3 of the respondents (6%) had completed other degree programs before coming to any of the construction programs.

Twenty-two respondents (76%) continued their education after completing their BCT program. All of these individuals went on for a four-year BS in Construction Management at FSU. In addition, one of these same individuals completed his BS in Business at Ferris State in the same year as he completed his BS in Construction Management.

Initial Salary Range:

Respondents were asked to indicate their initial salary range based upon the construction degree that led to their initial employment. The following distribution was observed for the AAS BCT degree graduates.

Initial Salary Range	AAS BCT
Less than $20,000	0
$20,000 to $25,000	1
$25,000 to $30,000	2
$30,000 to $35,000	2
$35,000 to $40,000	1
$40,000 to $45,000	0
$45,000 to $50,000	0
More than $50,000	2
Total Responding to Question:	8
Number Not Responding to Question:*	21

*Response was predicated on the fact that initial salary was based on completion of AAS degree. Those not responding may have continued their education.

Average initial salaries for BCT graduates were in the range of $30,000 to $35,000.

Current Salary Range:

Respondents were asked to indicate their current salary range. The following distribution was observed for BCT graduates.

Current Salary Range	AAS BCT
Less than $20,000	0
$20,000 to $25,000	1
$25,000 to $30,000	2
$30,000 to $35,000	7
$35,000 to $40,000	4
$40,000 to $45,000	9
$45,000 to $50,000	2
More than $50,000	4
Total Responding to Question:	29
(Number Not Responding to Question:)	0

Average current salaries for BCT graduates were in the range of $35,000 to $40,000.

Salary Progression:

Correlation of salaries is difficult due to several factors. On one hand, some students are nontraditional, have much more experience than others, or may actually be employed in a relative's or their own business. In other words, they have a job waiting for them upon graduation. Their education is a chance to improve their performance or attain a higher level within the company. On the other hand, many are first-time-construction employees. These graduates will generally start at the bottom and work their way up. In addition, many of our students have prior degrees in such areas as technology, business, real estate and the like – demanding more compensation upon graduation.

A chart illustrating salary progression is provided at the end of this section.

Career Avenue:

The following illustrates the present track of respondents' careers. Most of the BCT respondents (90%) are currently practicing as Construction or Project Managers, participate in company management, or own their own companies. The fact that most have moved into such positions of authority is an indication of the success of the Ferris Construction programs.

A chart illustrating the distribution of graduates in the various career tracks appears at the end of this section.

Program Topics – Career Relevance versus Preparation

The survey listed topics typically covered throughout a student's academic career. Each topic has a particular level of relevance for each degree program. Many of these topics are explicitly covered (i.e., a course specifically details the information). Others are implicitly covered (i.e., related material is included in one or more courses). The average responses to the evaluation of Relevance and Preparation (Survey Question F) are attached. In summary:

- Average Rate of Relevance: 3.8
- Average Rate of Preparation: 3.6

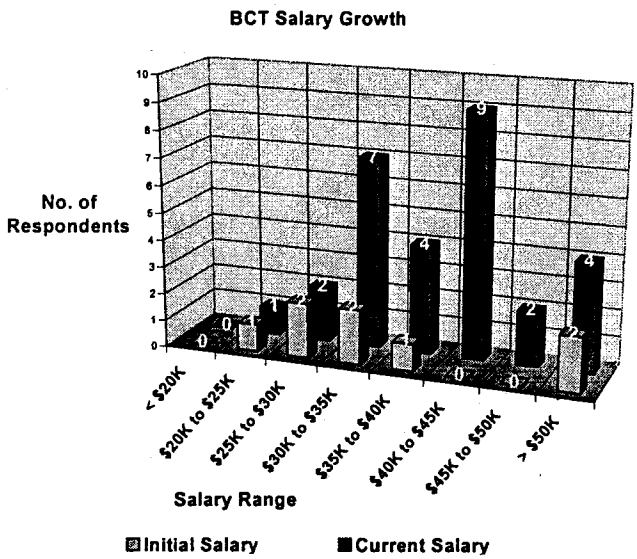
This indicates that on a whole, the graduates of the BCT program rated the preparation that they received for their career in fairly proportionate level with their needs. (Ratings of Relevance fall in

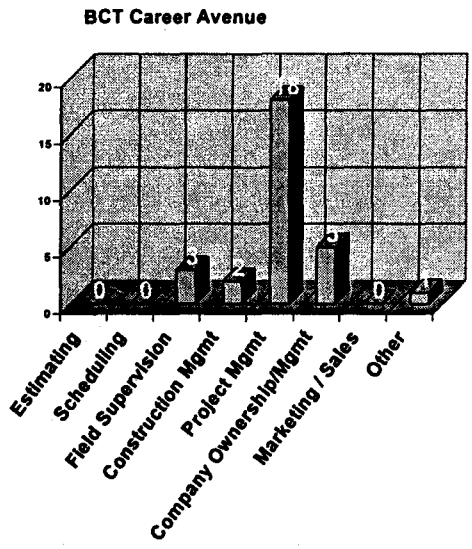
the range between *Important* {4} and *Relevant* {3}. Ratings of Preparation fall in the range *between Well Prepared* {4} and *Fairly Prepared* {3}.)

Other observations:

- Topics where less than 50% of respondents rated Preparation met or exceeded the level of Relevance:
  - Oral Communications 23%
  - Written Communication 43%
  - Marketing & Selling 48%
  - Mechanical & Electrical Systems 44%
  - Scheduling 46%
  - Supervision 33%

- Topics where 80% or more of respondents rated Preparation met or exceeded the level of Relevance:
  - Highway Technology 89%
  - Hydraulics & Hydrology 82%
  - Materials Properties & Testing 88%
  - Physics 82%
  - Statics & Strength of Materials 84%




BCT Career Avenue
20
15
10
5
0
0
0
3
2
18
5
0
4
Estimating
Scheduling
Field Supervision
Construction Mgmt
Project Mgmt
Company Ownership/Mgmt
Marketing / Sales
Other

Civil Engineering Technology Program (AAS)

Total Surveys Mailed:	27*
Undeliverable - Returned to Sender:	2
Assumed Delivered:	25
Returned:	6
Response Rate:	24%

(* Represents the number of graduates for which addresses could be ascertained.)

Additional Education

Two of the respondents (33%) had completed other degree programs before coming to any of the construction programs.

Five respondents (83%) continued their education after completing their construction program. All of these individuals went on for a four-year BS in Construction Management at FSU

Initial Salary Range:

Respondents were asked to indicate their initial salary range based upon the construction degree that led to their initial employment. The following distribution was observed for the AAS CET degree graduates.

Initial Salary Range	AAS CET
Less than $20,000	0
$20,000 to $25,000	1
$25,000 to $30,000	1
$30,000 to $35,000	0
$35,000 to $40,000	0
$40,000 to $45,000	0
$45,000 to $50,000	0
More than $50,000	0
Total Responding to Question:	2
Number Not Responding to Question:*	4

*Response was predicated on the fact that initial salary was based on completion of AAS degree. Those not responding may have continued their education.

Average initial salaries for CET graduates were in the range of $20,000 to $25,000.

Current Salary Range:

Respondents were asked to indicate their current salary range. The following distribution was observed.

Current Salary Range	AAS CET
Less than $20,000	0
$20,000 to $25,000	0
$25,000 to $30,000	1
$30,000 to $35,000	3
$35,000 to $40,000	1
$40,000 to $45,000	1
$45,000 to $50,000	0
More than $50,000	0
Total Responding to Question:	6
(Number Not Responding to Question:)	0

Average current salaries for CET graduates were in the range of $35,000 to $40,000.

Salary Progression:

Correlation of salaries is difficult due to several factors. On one hand, some students are nontraditional, have much more experience than others, or may actually be employed in a relative's or their own business. In other words, they have a job waiting for them upon graduation. Their education is a chance to improve their performance or attain a higher level within the company. On the other hand, many are first-time-construction employees. These graduates will generally start at the bottom and work their way up. In addition, many of our students have prior degrees in such areas as technology, business, real estate and the like – demanding more compensation upon graduation.

A chart illustrating salary progression is provided at the end of this section.

Career Avenue:

The following illustrates the present track of respondents' careers. Five of the CET respondents (83%) are currently practicing as Construction or Project Managers, participate in company management, or own their own companies. The fact that most have moved into such positions of authority is an indication of the success of the Ferris Construction programs.

A chart illustrating the distribution of graduates in the various career tracks appears at the end of this section.

Program Topics – Career Relevance versus Preparation

The survey listed topics typically covered throughout a student's academic career. Each topic has a particular level of relevance for each degree program. Many of these topics are explicitly covered (i.e., a course specifically details the information). Others are implicitly covered (i.e., related material is included in one or more courses). The average responses to the evaluation of Relevance and Preparation (Survey Question F) are attached. In summary:

- Average Rate of Relevance: 3.9
- Average Rate of Preparation: 3.5

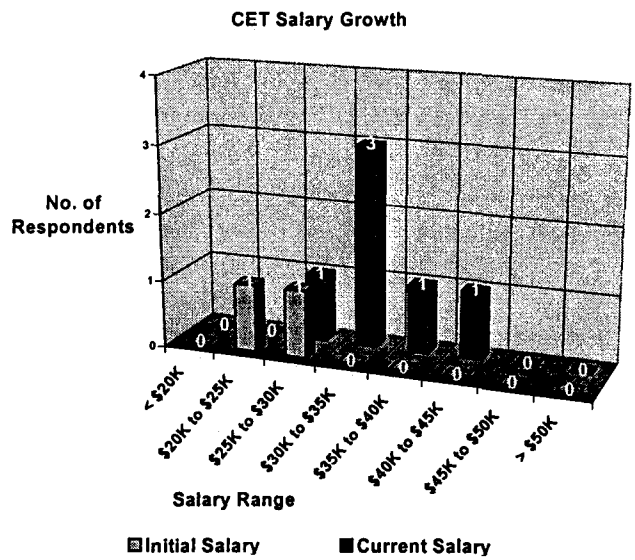
This indicates that on a whole, the graduates of the CET program rated the preparation that they received for their career in fairly proportionate level with their needs. (Ratings of Relevance fall in

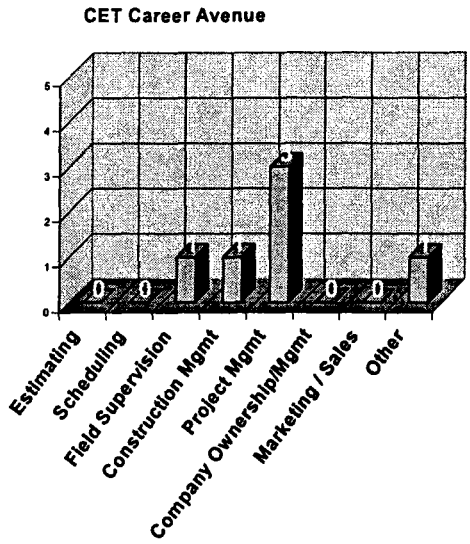
the range between *Important* {4} and *Relevant* {3}. Ratings of Preparation fall in the range *between Well Prepared* {4} and *Fairly Prepared* {3}.)

Other observations:

- Topics where less than 50% of respondents rated Preparation met or exceeded the level of Relevance:
  - Oral Communications 17%
  - Written Communication 20%
  - Office Computer Applications 33%
  - Technical Computer Applications 33%
  - Construction Administration 33%
  - Mechanical & Electrical Systems 25%
  - Safety 20%

- Topics where 80% or more of respondents rated Preparation met or exceeded the level of Relevance:
  - Construction Economics 80%
  - Estimating – Quantity Takeoffs 80%
  - Framing 100%
  - Issues in Construction 100%
  - Plan Reading 83%
  - Quality Assurance / Quality Control 80%
  - Scheduling 80%
  - Surveying 83%




CET Career Avenue
6
4
3
2
1
0
0
0
1
1
3
0
0
1
Estimating
Scheduling
Field Supervision
Construction Mgmt
Project Mgmt
Company Ownership/Mgmt
Marketing / Sales
Other

Construction Management Program (BS)

Total Surveys Mailed:	104*
Undeliverable - Returned to Sender:	6
Assumed Delivered:	98
Returned:	45
Response Rate:	46%

(* Represents the number of graduates for which addresses could be ascertained.)

Additional Education

Thirty-nine of the respondents (87%) had completed at least one other degree program before completing the BS in Construction Management. Of these, 27 of them received at least one AAS in a construction program here at FSU.

One respondent continued his education after completing their construction program. This particular individual completed his BS in Business at Ferris State in the same year as he completed his BS in Construction Management.

Initial Salary Range:

Respondents were asked to indicate their initial salary range based upon the construction degree that led to their initial employment. The following distribution was observed for the BS CM degree graduates.

Initial Salary Range	BS CM
Less than $20,000	0
$20,000 to $25,000	4
$25,000 to $30,000	16
$30,000 to $35,000	12
$35,000 to $40,000	5
$40,000 to $45,000	4
$45,000 to $50,000	0
More than $50,000	0
Total Responding to Question:	41
Number Not Responding to Question:	4

Average initial salaries for CM graduates were in the range of $25,000 to $30,000.

Current Salary Range:

Respondents were asked to indicate their current salary range. The following distribution was observed.

Current Salary Range	All Degrees
Less than $20,000	1
$20,000 to $25,000	2
$25,000 to $30,000	4
$30,000 to $35,000	14
$35,000 to $40,000	11
$40,000 to $45,000	13
$45,000 to $50,000	4
More than $50,000	4
Total Responding to Question:	53
(Number Not Responding to Question:)	0

Average current salaries for CM graduates were in the range of $35,000 to $40,000.

Salary Progression:

Correlation of salaries is difficult due to several factors. On one hand, some students are nontraditional, have much more experience than others, or may actually be employed in a relative's or their own business. In other words, they have a job waiting for them upon graduation. Their education is a chance to improve their performance or attain a higher level within the company. On the other hand, many are first-time-construction employees. These graduates will generally start at the bottom and work their way up. In addition, many of our students have prior degrees in such areas as technology, business, real estate and the like – demanding more compensation upon graduation.

A chart illustrating salary progression is provided at the end of this section.

Career Avenue:

The following illustrates the present track of respondents' careers. Most of the CM respondents (89%) are currently practicing as Construction or Project Managers, participate in company management, or own their own companies. The fact that most have moved into such positions of authority is an indication of the success of the Ferris Construction programs.

A chart illustrating the distribution of graduates in the various career tracks appears at the end of this section.

Program Topics – Career Relevance versus Preparation

The survey listed topics typically covered throughout a student's academic career. Each topic has a particular level of relevance for each degree program. Many of these topics are explicitly covered (i.e., a course specifically details the information). Others are implicitly covered (i.e., related material is included in one or more courses). The average responses to the evaluation of Relevance and Preparation (Survey Question F) are attached. In summary:

- Average Rate of Relevance: 3.8
- Average Rate of Preparation: 3.6

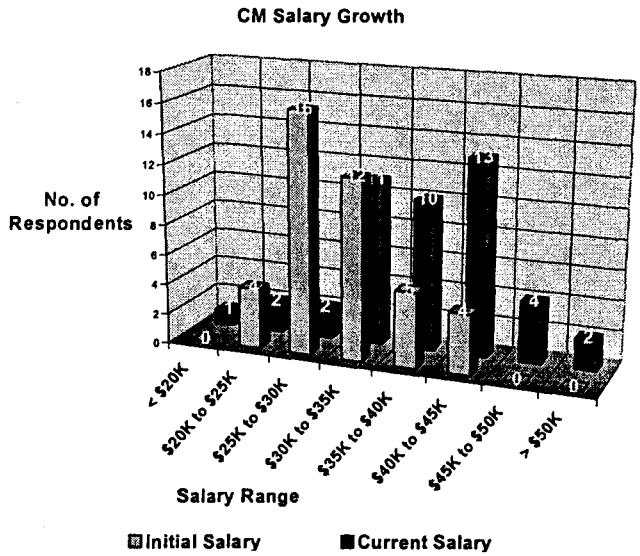
This indicates that on a whole, the graduates of the CM program rated the preparation that they received for their career in fairly proportionate level with their needs. (Ratings of Relevance fall in

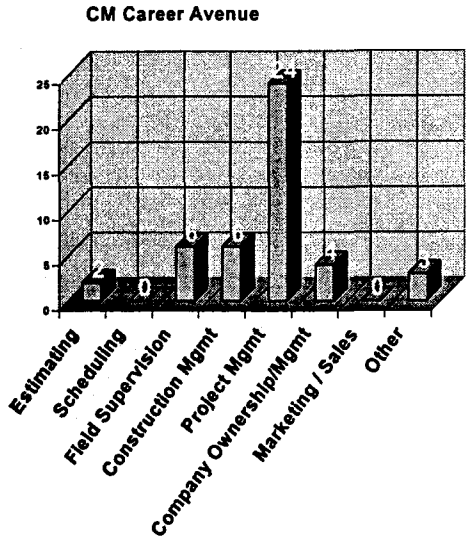
the range between *Important* {4} and *Relevant* {3}. Ratings of Preparation fall in the range *between Well Prepared* {4} and *Fairly Prepared* {3}.)

Other observations:

- Topics where less than 50% of respondents rated Preparation met or exceeded the level of Relevance:
  - Oral Communications 26%
  - Written Communication 38%
  - Mechanical & Electrical Systems 32%
  - Supervision 46%

- Topics where 80% or more of respondents rated Preparation met or exceeded the level of Relevance:
  - Construction Economics 81%
  - Highway Technology 93%
  - Hydraulics & Hydrology 93%
  - Materials Properties & Testing 81%
  - Physics 87%




CM Career Avenue
25
20
15
10
5
0
0
Estimating
Scheduling
Field Supervision
Construction Mgmt
Project Mgmt
Company Ownership/Mgmt
Marketing / Sales
Other

Summary

- Graduates of all three programs appear to be satisfied with their education.
- Most graduates have moved into responsible positions of management within their respective construction firms.
- Most graduates received competitive starting salaries with a steady and successful rise of income.
- Considering topic areas in which graduates' perception of relevance significantly exceeded their preparation:
    - Oral and written communication skills are present on all three program surveys. It must be noted that the importance of communication skills is continuously emphasized with our students. Unfortunately, these skills are such that students tend to discount their importance. All too often they discover upon entering their first job that it is indeed an important topic. Communication skills are explicitly and implicitly covered throughout the curriculum. The graduates' responses reinforce our efforts.
    - The Mechanical & Electrical Systems topic was identified in all three program surveys. The Mechanical & Electrical Systems courses were recently revamped. These changes may not be reflected in the survey responses at this time.
    - Generally, other topics in each program survey that displayed such a discrepancy are related to limitation of an AAS versus a BS degree. Most of our graduates have risen to positions of middle to upper management in their respective firms—regardless of AAS or BS. While this demonstrates the success of our programs, in particular the AAS programs, it also highlights the full coverage of topics that a student in the BS program is provided. The additional topics listed under this heading in the BCT and CET program surveys are, in fact, materials covered under the third and fourth year of the BS program. Looking at the response of the BS CM graduates, these topics are indeed satisfied with the exception of supervision. However, as with communication skills, supervision is a concept that is best understood once experienced. Apparently, our students need to be better prepared to handle the communication and supervisory tasks which are thrust upon them after graduation.
- Considering topic areas in which graduates' perception of preparation significantly met or exceeded their relevance:
    - In most cases, such a response is probably due to three situations.
        - ➢ The preparation for the topic area provided by Ferris was outstanding.
        - ➢ The topic area was presented, the student completed the material, but found that the topic was not directly applicable in their particular position. Therefore, the rating of relevance was well under that of preparation.
        - ➢ The topic area was never presented and, upon employment, the topic was never applicable. This is the case for the courses that are program specific. The survey asked for feedback on many topics which were <u>not</u> explicitly covered by all three programs. For example, while Hydrology is a topic included in the CET program, it is not a topic in the BCT program. However, it was included in the BCT survey so the faculty could ascertain if the BCT graduates were actually being exposed to a subject on their jobs which was not included in their curriculum. In other words, the course topics found in the CET program do not include a few of those in the BCT program, and vice-versa.

Likewise, the AAS program does not include course topics found in the third and fourth year of the BS program. In the case where a graduate rates one of the topics he or she did not have as a course, the preparation would be considered low but, correspondingly, so would the relevance.

The results of all of these surveys are being shared with the faculty and will be used to improve the delivery of all of the topic areas.

SECTION 3
Employer Survey

The employer survey was conducted through the mail. The questionnaire was sent to employers indicated by the last five years of graduate hirings (Appendix C). Fifty-eight questionnaires were sent out and nineteen were returned for a response rate of 32.8%. The employers were asked to rate the overall performance of the individual graduate in different technical and skill areas. The questionnaires for each of the three degree programs are presented in Appendix D. The thirteen questions on the each of the questionnaires were the same questions.

Questionnaire Results

Each question is identified and the corresponding result from the questionnaire is listed below.

1. Uses written and oral communication skills effectively.

	CM	BCT	CET
Excellent (score = 5)	5	2	1
Good (score = 4)	7	3	0
Average (score = 3)	4	1	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.1	4.2	5.0

2. Possesses adequate technical skills (Estimating, Cost Control, Scheduling).

	CM	BCT	CET
Excellent (score = 5)	5	1	1
Good (score = 4)	9	4	0
Average (score = 3)	2	1	0
Below Average (score = 2	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.2	4.0	5.0

3. Possesses adequate mathematical skills.

	CM	BCT	CET
Excellent (score = 5)	5	2	0
Good (score = 4)	9	2	0
Average (score = 3)	1	2	1
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.3	4.0	3.0

4. Uses critical thinking, problem solving and decision making skills.

	CM	BCT	CET
Excellent (score = 5)	4	2	0
Good (score = 4)	10	2	1
Average (score = 3)	2	2	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.1	4.0	4.0

5. Exhibits an appropriate level of responsibility and self-management.

	CM	BCT	CET
Excellent (score = 5)	7	2	1
Good (score = 4)	6	4	0
Average (score = 3)	3	0	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.3	4.3	5.0

6. Chooses ethical courses of action.

	CM	BCT	CET
Excellent (score = 5)	7	2	1
Good (score = 4)	7	4	0
Average (score = 3)	1	0	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.4	4.3	5.0

7. Identifies, organizes, plans, and allocates resources.

	CM	BCT	CET
Excellent (score = 5)	2	1	0
Good (score = 4)	11	5	0
Average (score = 3)	3	0	1
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	3.9	4.2	3.0

8. Participates as a team player.

	CM	BCT	CET
Excellent (score = 5)	12	2	0
Good (score = 4)	3	3	0
Average (score = 3)	0	1	1
Below Average (score = 2)	1	0	0
Poor (score = 1)	0	0	0
Mean Score	4.6	4.2	3.0

9. Works well with individuals from diverse backgrounds.

	CM	BCT	CET
Excellent (score = 5)	9	1	0
Good (score = 4)	5	4	0
Average (score = 3)	1	1	1
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.5	4.0	3.0

10. Acquires, interprets and uses information effectively.

	CM	BCT	CET
Excellent (score = 5)	2	1	1
Good (score = 4)	12	5	0
Average (score = 3)	2	0	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	4.0	4.2	5.0

11. Possesses the ability to gain rapport with clients.

	CM	BCT	CET
Excellent (score = 5)	4	3	1
Good (score = 4)	6	2	0
Average (score = 3)	3	1	0
Below Average (score = 2)	1	0	0
Poor (score = 1)	0	0	0
Mean Score	3.9	4.3	5.0

12. Uses technology effectively (e.g., computers, telecommunication).

	CM	BCT	CET
Excellent (score = 5)	5	1	1
Good (score = 4)	10	4	0
Average (score = 3)	0	0	0
Below Average (score = 2)	0	1	0
Poor (score = 1)	0	0	0
Mean Score	4.3	3.8	5.0

13. Possesses leadership and negotiation skills.

	CM	BCT	CET
Excellent (score = 5)	2	1	0
Good (score = 4)	9	3	1
Average (score = 3)	5	2	0
Below Average (score = 2)	0	0	0
Poor (score = 1)	0	0	0
Mean Score	3.8	3.8	4.0

Summary of Questionnaire Results

The responses were overall very good and complimentary to the Construction Technology and Management programs. The fact that there were only three responses of a "Below Average" rating in the three different skill areas and there were no "Poor" responses indicates that the recent graduates have been well received by their initial employers. The light response of only one returned questionnaire for the Civil Engineering Technology program is due to the fact that the majority of the students receiving an Associate in Applied Science (Civil Engineering Technology) continue their education and earn a Bachelor of Science (Construction Management).

There were also three questions asked on the cover letter sent to each firm along with the questionnaire. These questions and their corresponding results are as follows:

Do you as an employer currently participate or desire to participate in the following activities:

	YES	NO
Serve on an advisory committee	6	13
Placement of students in summer employment	10	9
Would you hire another graduate from one of our construction programs	19	0

The bottom line measure of any program's effectiveness is revealed in the response to the question "Would you hire another graduate from one of our construction programs?" In this case, 100% of the responding contractors would hire another graduate of the Construction Technology and Management programs.

SECTION 4
Student Survey

In April 1998 a survey was conducted to determine student satisfaction and perceptions of the Civil Engineering Technology (CET), Building Construction Technology (BCT), and Construction Management (CM) programs. All students in the three programs were given the opportunity to participate in the survey. The students surveyed were split into three major groups. Since the curriculum for BCT students is identical to the first two years of the Construction Management Commercial/Industrial (CMBT) track, all freshman and sophomore BCT and CMBT students were combined into one group (referred to as the BCT group). Likewise, all freshman and sophomore CET and Construction Management Highway/Bridge (CMCT) track students were combined into the CET group, as they also have identical course requirements. The third group is comprised of all junior and senior Construction Management students, and will be called the CM group. Survey data is in Appendix E.

The number of respondents in each category were:

1. BCT group: 59
2. CET group: 11
3. CM group: 84

Only four courses distinguish the CET program from the BCT program. All other courses are common to both programs. Therefore, it would be reasonable to combine the CET and BCT program responses into one group representing all freshman and sophomore responses. This is reinforced by the fact that the BCT and CET student responses to all questions were virtually identical, with no obvious distinction between the opinions of CET and BCT students. The CM student responses were, in most cases, slightly higher then those of the CET and BCT students, but not significantly different in any area.

The students were asked their perceptions of their courses, instructors, laboratories, classrooms and equipment, as well as their satisfaction with instructional support and placement services. Students were invited to grade each question on a five-point scale. The rating system was as follows:

5 = Excellent
4 = Good
3 = Average
2 = Below average
1 = Poor

A copy of the survey documents for each group listing the average response to each question is included in this report. It is assumed that any score of three or over is acceptable. It should be noted that no average score on any of the three surveys was below 3, indicating acceptable ratings in all areas. A summary of the survey results follows:

> In general, BCT and CET students were very pleased with their courses, faculty, laboratories, equipment and classrooms. They were also very happy with services offered by the placement office. The program specific faculty earned high marks, well over 4.0 in the areas of subject matter knowledge and availability to students.

Some negative comments were recorded relative to maintenance in the computer laboratories. However, the computer lab has sixteen workstations, all Pentium computers, seventeen-inch monitors, and an improved system of technical support from the College of Technology. Most of the negative comments were a result of some temporary problems being experienced at the time the survey was issued.

The results of the CM surveys closely paralleled those of the BCT and CET students. Highest marks (over 4.5) were given to program faculty. Students were very pleased with course content, career focus, faculty, laboratories, classrooms and equipment. Placement services also received very high marks. Maintenance in the computer lab received only average marks. Problems related to these average scores have been corrected by the College of Technology.

In summary, the students in BCT, CET and CM are basically very satisfied with their academic programs, instructors, facilities and support services.

SECTION 5
Faculty Survey

The Construction Technology & Management faculty were asked to fill out a questionnaire rating their perceptions of the Building Construction Technology (BCT), Civil Engineering Technology (CET) and Construction Management (CM) programs. The survey instrument used was the PROE document (Appendix F). Seven faculty members completed the survey. All questions were graded from one to five as follows:

5 = Excellent
4 = Good
3 = Acceptable
2 = Below expectations
1 = Poor

Sample surveys and average numerical results for each question are included in Appendix F. Results of the surveys are summarized below.

The CET and BCT programs each represent the first two years of the Bachelor of Science Construction Management program. Faculty responses to the questions on all three programs were very similar. There were no obvious distinctions between the survey results for the three programs. Therefore, the results of all three are summarized together.

The following areas were rated very high (with scores between 4 and 5):

- Program goals
- Course objectives
- Use of information on labor market needs
- Use of industry standards
- Relevance of support courses
- Program availability
- Provisions for sex equity
- Program advising
- Adequacy of career planning
- Placement effectiveness
- Provision for leadership and coordination
- Qualifications of instructional staff
- Adequacy of equipment and supplies

Based on the above, it appears that the BCT, CET and CM programs are doing an excellent job of educating students. The instructional staff is well qualified, and does a good job both in teaching and advising. The programs have a program coordinator who splits duties between teaching and other activities, such as student recruitment. The programs and related opportunities for women are promoted in high schools and community colleges throughout the state. Student placement is excellent, and reflects a use of industry standards within the classroom.

Several areas received low marks by the faculty. The first was the provision for equipment in the capital outlay budget. Most equipment is purchased through available vocational

education funds. However, this money is not available every year, and there is no provision for routine replacement of laboratory equipment. Also rated low was the use of instructional support staff, such as aides and laboratory assistants. The faculty also felt that professional development opportunities were somewhat lacking.

The area receiving very low marks (an average score of two) was the adequacy of instructional staffing. The BCT, CET and CM program faculty routinely teach overloads, and are in need of a ninth faculty position. The program formerly had nine positions, including one full-time temporary position. Enrollment has increased thirty percent in the past five years, but no additional faculty have been hired. Faculty members wish to split large sections of junior and senior level courses, especially those that are Writing Intensive Courses (WIC). They also wish to have less than four different class preparations, and thus allow time for professional development, consulting, and other scholarly activities.

One other area receiving comments in the survey document was the current laboratory space available to teach several classes. Currently, the CTC 107 laboratory houses all materials, soils, practices and framing courses taught by the three programs (a total of five different courses with multiple laboratory sections). As a result, it is very difficult to schedule classes without time conflicts, and physical space constraints make it difficult for all courses to operate effectively. Therefore, the program needs separate laboratory facilities for soils and materials laboratories. Such facilities were once available in the Automotive Center, but were lost in the early 1980's.

SECTION 6
Advisory Committee Survey

The Construction Technology & Management Advisory Committee oversees the three programs profiled in this report. These are the Civil Engineering Technology (CET), Building Construction Technology (BCT) and Construction Management (CM) programs. All advisory committee members were given a separate survey for each of the three program areas. Since the CET and BCT programs each represent the first two years of the CM program, some questions regarding laboratory facilities and faculty credentials and the like would naturally be answered the same on all three surveys. Other questions, such as demand for graduates, could potentially be answered much differently.

The committee members were asked a range of questions about program facilities, faculty credentials, abilities of the graduates, the need for accreditation, and several others. Survey questions were answered on a scale from one to five, as follows:

5 = Excellent
4 = Good
3 = Average
2 = Below average
1 = Poor

There were no major differences in the answers for the three surveys. The lowest average score for any question was over 3.5, indicating that the advisory committee was, in general, very pleased with the program and the abilities of the graduates. This is very significant, as many of the committee members have hired program graduates to work for their firms. Note that two questions received a perfect score of 5.0 on the CM survey. All of the members noted that there is a high demand for Ferris CM graduates, and that they would be willing to hire a graduate from this program.

Rated very high on the surveys were the continued need for ACCE (American Council for Construction Education) accreditation, the demand for graduates, the quality of the curriculum, and the credentials of the faculty. Also rated high were the readiness of the graduates to enter the work force, their ability to compete with graduates from similar programs at other institutions, and the level of support from the institution.

Several areas were rated somewhat lower on the surveys. Several members did not feel the programs produce enough graduates. Each year the number of jobs far exceeds the number of available graduates, especially in the CET and CM programs. An enrollment increase in CET and enhancement of the CM program to produce more graduates should be pursued. Related to this, lower marks were received regarding the adequacy of laboratory facilities. The committee members are aware that the three programs must teach all practices, framing, materials and soils labs in one laboratory facility. Because this facility is fully utilized, expansion of the programs and flexibility in scheduling is virtually impossible. The committee shares the faculty's opinion that separate soils and materials labs are needed to improve program offerings.

Also receiving somewhat lower marks from the Advisory Committee was the adequacy of the number of faculty members. The CET, BCT and CM programs have a need for a ninth faculty position to reduce overloads and allow more time for scholarly activities.

In summary, the Advisory Committee survey indicates that the BCT, CET and CM programs are providing well-educated students needed by the industry. Survey summaries can be found in Appendix G.

SECTION 7
Labor Market Analysis

The market for BCT AAS, CET AAS and CM BS graduates is excellent. Over the past several years, every graduate actively seeking employment has been successful in obtaining employment at, on average, a competitive salary. Specific data for 1994 to 1998 is at Appendix C.

The construction industry can be very cyclic in nature, generally following the overall health of the national economy, but lagging behind the movement in the economy by some period of time. In other words, if the economy slows, current construction projects continue to completion, at which time the construction industry declines. Likewise, when the economy is on the upswing, the construction industry does not recover until the general economy gains confidence that the upswing will continue. In January 1998, the construction weekly publication Engineering News-Record (ENR) reflected that the construction industry had "reached cruising speed" in relationship to the national economy. The current view is that the recovery of the construction industry has peaked and will flatten out at a "very high level."

Nationwide, the outlook for jobs in all sectors of the construction industry is excellent. The Bureau of Labor Statistics 1998-1999 Occupational Outlook Handbook states that employment of construction technicians and construction managers is expected to increase as fast as the average for all occupations through the year 2006, with the outlook for AAS and BS degree holders particularly favorable.

A strength of the Construction Technology and Management programs is the number of firms that hire the graduates. In the past five years, five firms have hired three graduates each, eight firms have hired two graduates each, and 68 firms have hired one graduate each. This wide base of support helps spread the reputation of the programs and leads to repeat hiring in the future.

SECTION 8
Facilities and Equipment Evaluation

The Construction Technology and Management programs primarily utilize classrooms and laboratories in the Swan Building (SWN) and the Construction Technology Center (CTC). All computer related courses are taught in the Swan Building. The programs have several laboratory courses, including CONM 111 Construction Practices (6 sections/year), CONM 121 Materials Properties and Testing (7 sections/year), CONM 212 Soils and Foundations (5 sections/year), BCTM 213 Wood and Steel Framing and Finishes (4 sections/year), and CETM 214 Advanced Materials Properties and Testing (1 section/year). SURE 421 Soils Engineering (2 sections/year) is also taught by the construction program faculty. These laboratory courses are all taught in the CTC.

The following facilities are dedicated to the CTM programs:

Facility	Capacity	Use
SWN 101	16	Computer Laboratory
SWN 207	36	Classroom
SWN 307	26	Classroom
CTC 107	16	Construction Laboratory

Other classrooms in the Swan Building and elsewhere are used if the dedicated classrooms are not available or if the section sizes exceed their capacity. Some combined lectures for laboratory courses have had over 70 students, and some non-laboratory sections have had enrollments of 40 or more.

There is a need for a new Construction Technology and Management laboratory, including a separate lecture area. Currently, the physical layout limits the CTC 107 laboratory to either one lecture or one laboratory section at a time. Problems exist with the uncontrolled laboratory environment, which causes problems with lumber quickly drying and warping to the extent it is unusable (sometimes within a few days after purchase). Gravel and sand become almost oven-dry, creating unrealistic conditions for the materials laboratories. At one time, the programs had separate soils and materials laboratories, but one laboratory was lost in the early 1980's. Today, separate practices, soils, materials and bituminous laboratories are needed.

The faculty is aware of the proposed capital outlay project for the College of Technology, which would include these facilities. At this time, this project is in the early stages of development. Last year, the faculty requested a minor capital outlay project to provide a redefined lecture area and new laboratory work stations, but this request was not funded.

Current construction laboratory equipment is adequate, and has been funded from Voc Ed, year-end funds and development funds. A structured plan and identified, dependable funding for the replacement of worn out equipment and the purchase of newly developed equipment is needed.

Current computer laboratory equipment is adequate. However, the Pentium 133 computers will require replacement soon, and funds must be available. Computer laboratory assets must be included in the above-mentioned plan.

SECTION 9
Curriculum

Since 1990, the BCT AAS, CET AAS and CM BS curricula have undergone significant review and revision. In the late 1980's, work began on attaining American Council for Construction Education (ACCE) accreditation for the CM BS. At that time, the curriculum did not meet ACCE standards. When it became apparent that semester conversion was a reality, the accreditation effort was delayed in order that the new semester-based curriculum could be built to meet accreditation requirements. This effort was successful, and the CM BS attained initial accreditation for five years in March 1993, based on the new semester curriculum implemented in Fall 1993.

As part of the curriculum changes required by semester conversion, a stand-alone 0+4 CM BS was created. This program was based on the fact that about 65-70% of incoming freshmen indicated that they considered themselves BS, not AAS, degree candidates and that this distinction was important to them. Significantly, the first two years of this 0+4 CM BS were not the same as the AAS programs.

After two years under semesters, the faculty undertook a major review and revision of the curricula. There were issues not covered under semester conversion, the two years exposure to the new courses, and recognition that the programs needed to be returned to true 2+2 programming. The curricula implemented in Fall 1996 created a CM BS Commercial/Industrial Track, in which the first two years are the BCT AAS. Likewise, a CM BS Highway/Bridge Track in which the first two years are the CET AAS was created. The program checksheets are in Appendix H. In addition, this revision eliminated five elective courses, of which the student was required to complete only two. The content of all five courses was included in the new curriculum for all students. This revision also reduced the entry-level mathematics requirement to MATH 110.

In late 1996, the requirement for MGMT 310 was expanded to allow the student to take either MGMT 301 Applied Management or MGMT 310 Small Business Management in the CM BS.

In early 1997, another review and revision took place. The short experience with a MATH 110 entry requirement indicated this change was unwise, and the requirement was returned to MATH 116. This revision realigned some course prerequisites. Most significantly, CONM 323, CONM 412 and CONM 422 were granted the Writing Intensive Course (WIC) designation.

The details of all the curriculum revisions described above can be seen in the Curriculum Revisions appendix to this report provided separately. No curriculum revisions have been made since. The American Council for Construction Education reaccreditation visiting team report (Appendix I) received in March 1998 found that the current CM BS is short two semester hours in the ACCE Business and Management course category. The visiting team also expressed concerns about the placement of calculus, statistics and physics in the curriculum. Concerns about a lack of prerequisites in three courses were also raised. These issues are now under review and will be responded to appropriately prior to filing the required ACCE Interim Report in Fall 2000.

SECTION 10
Enrollment Trends

Enrollment data for the BCT AAS, CET AAS, CM BS and the three programs combined is tabulated below. Detailed information on enrollment by class year is available at Appendix A.

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997	Fall 1998
On Campus:						
BCT AAS	80	67	55	39	43	50
CET AAS	27	23	18	14	13	11
CM BS	60	87	107	126	141	158
Sub-Total	167	177	180	179	197	219
Increase from Fall 1993:					18%	
Off Campus:						
CM BS, Certificates	2	13	16	21	22	17
Sub-Total	169	190	196	200	219	236
Increase from Fall 1993:					30%	
Pre-Tech	29	27	24	45	39	40
Total	198	217	224	266	258	276
Increase from Fall 1993:					30%	

The above enrollment trends should be reviewed in the context of overall Ferris State University enrollment, which declined 15% from Fall 1993 to Fall 1997. During the same period, overall College of Technology enrollment declined 2.2%. Reports for Fall 1998 indicate total university enrollment up 1.9% over 1997, with Construction Technology and Management programs enrollment up 7.0% over Fall 1997. Including Fall 1998, Construction Technology and Management programs enrollment is up 40% from Fall 1993.

The apparent decline in BCT AAS and CET AAS enrollment, along with the apparent rapid increase in CM BS enrollment must be viewed in the light of two factors. First, at semester conversion a stand alone 0+4 CM BS was created effective Fall 1993. The first two years of this 0+4 degree were not the same as the AAS degrees. Therefore, these students did not enroll in or earn the AAS after two years at FSU. In the Fall 1996, the curriculum was revised to return to true 2+2 programming from the two AAS programs to the BS program. Second, entering freshmen are still allowed to enroll as 0+4 BS candidates and are not reflected in AAS program enrollment, even though they will earn an AAS degree after two years. The curriculum issues are discussed in detail in Section 9 of this report. On balance, the strong trend towards growth is clear.

In recent years, CET AAS enrollment and now enrollment in the CM BS Highway/Bridge Track have been low. Current enrollment is about two-thirds of what it was in the late 1980's and early 1990's. The reasons for this decline are unknown. This situation has been a concern for some time, especially in view of the demand for graduates and their successes, particularly in the asphalt paving industry. It appears that the BCT AAS and the CM BS Commercial/Industrial Track have high recognition in the high school population, but the CET AAS and the CM BS Highway/Bridge Track are relatively unknown. It is important to recognize that the total of CET AAS and CM BS Highway/Bridge Track enrollment was 18 in Fall 1997 and is 29 in Fall 1998, a significant increase. Recent recruiting efforts seem to be bearing fruit, but more remains to be done in this area.

SECTION 11
Program Productivity/Cost

Productivity data for the BCTM, CETM, and CONM course prefixes and the three course prefixes combined are tabulated below. Data for Ferris State University, the College of Technology and the three departments within the college are included for comparison purposes.

PRODUCTIVITY REPORT
SCH/FTEF
1993-1998

Area	1993/1994	1994/1995	1995/1996	1996/1997	1997/1998
FSU	485	466	464	446	442
College of Technology	316	334	339	333	323
Transportation & Electronics Department	282	287	325	304	297
Design, Manufacturing & Graphic Arts Department	316	361	324	324	306
Construction & Facilities Department	361	352	380	384	384
BCTM Prefix Courses (3)	413	379	368	390	435
CETM Prefix Courses (4)	174	207	269	454	108
CONM Prefix Courses (19)	407	437	461	487	486
BCTM/CETM/CONM Courses Combined	382	413	448	474	448

All BCT AAS and all CM BS Commercial/Industrial Track students take the three BCTM prefix courses. All CET AAS and all CM BS Highway/Bridge Track students take the four CETM prefix courses. Productivity for each of the three programs cannot be determined separately, since CONM courses are required in all of the programs. Productivity for the three program course prefixes combined is well above that for the college and the departments. In fact, in 1997-1998 their combined productivity was exceeded by only one course prefix (MATL) within the entire college.

Relatively low productivity for the CETM prefix courses is due to enrollment. This situation is a matter of concern and is discussed in Section 10 of this report. The large fluctuations in CETM productivity are due to two factors. First, two of the four CETM courses were taught

by an administrator (the department head) during 1996-1997, resulting in an artificially high productivity. Second, course enrollment was high in 1996-1997 and low in 1997-1998 due to a number of out-of-sequence students. An average productivity of about 240 SCH/FTEF results from current enrollments without these two factors.

The high level of productivity for the programs is due to faculty loads and class sizes.

For academic years 1993-1994 through 1997-1998, the program faculty loads have included:

Average credit hours per faculty member per semester:	11.9
Average contact hours per faculty member per semester:	16.4
Average course preparations per faculty member per semester:	2.9
Average different courses taught per faculty member per year:	4.6
Average overloads (3 contact hours each) per semester:	1.9
Average overloads (credits) per semester	4.8

During the past two academic years, individual program faculty have taught as high as 16 credit hours in a semester, as high as 22 contact hours in a semester, as many as four course preparations in a semester, and as many as six different courses in an academic year. Collectively, they have taught as many as two overloads and six credits of overloads in a semester.

The individual program faculty are near, at or in some cases over the standard workload of 12 credits or 18 contact hours per semester. The number of course preparations and the number of courses taught are also high. The data include two courses per semester taught at the Grand Rapids Applied Technology Center in the CM BS degree and three certificate programs. Also included are four courses (ARCH 223, SURE 321, SURE 421and SURE 435) taught by the program faculty for other programs in the department. CONM 121, CONM 212 and CONM 221 are required in either or both the Surveying Technology AAS or the Surveying Engineering BS. Not included in the data is CONM 122, taught for the programs by a member of the Surveying Engineering faculty.

Class sizes also contribute to productivity. Enrollment is low in a few classes, most notably in the CETM prefix courses. Large sections in the AAS level courses are a problem. Large sections in the junior and senior CM BS courses are a major concern. Over the five academic years reviewed, eight CM BS courses (CONM 321, CONM 322, CONM 323, CONM 411/313, CONM 412, CONM 422, CONM 451 and CONM 499) have averaged 33 students per section. Three of these courses (CONM 323, CONM 412, and COMN 422) are Writing Intensive Courses (WIC). Courses constrained by physical limits such as laboratory space have been omitted from this analysis. For the eight courses included, four out of 25 sections (16%) had enrollment of 40 students or greater, with a high of 47 students in one section. In 17 out of 25 sections (68%), enrollment was 30 students or greater. Section sizes of this magnitude in junior and senior level courses are a major concern of the faculty.

The recent American Council for Construction Education (ACCE) reaccreditation visiting team report (Appendix I) cited faculty loads as a concern, stating that while current loads appear to indicate an adequate number of faculty, any future increase in enrollment will require added faculty resources. Enrollment has increased 7% since that report was written. The report cited a need for added faculty resources in order to provide the faculty with time for professional development, service, research and scholarly and creative activities.

Academic year 1996-1997 program teaching costs are tabulated below. Academic year 1997-1998 data was not available from the Office of Institutional Studies at the time this report was written. Data for Ferris State University, the College of Technology and the three departments within the college are included for comparison purposes.

Program Teaching Costs, Academic Year 1996-1997:

Area	Cost Per SCH For All Courses In The Major	Cost Per SCH By Course Prefix (Rank University-Wide)
FSU	$127.21	
College of Technology	$145.55	
Transportation and Electronics Department	$167.89	
Design, Manufacturing and Graphic Arts Department	$148.84	
Construction and Facilities Department	$117.97	
BCT AAS	$115.18	$164.92 (3 BCTM courses)* (39/139)
CET AAS	$101.31	$ 81.29 (4 CETM courses)* (101/139)
CM BS (all tracks)	$100.53	$112.08 (19 CONM courses)* (65/139)

*Note: There are three BCTM prefix courses and four CETM prefix courses. These courses are required in the respective AAS degrees and in the respective CM BS curriculum tracks. All other program courses carry the CONM prefix, both in the BCT AAS and the CET AAS as well as in the CM BS.

In terms of teaching costs for all courses in the major, all three programs are below FSU, college and department teaching costs. Only three programs in the entire college have lower teaching costs for all courses in the major.

In terms of teaching costs by course prefix, the CONM prefix courses rank in the middle of all course prefixes in the university. The low CETM prefix course teaching cost for this year is due to the fact that an administrator (the department head) taught two of the four courses.

Due to the interrelated nature of the programs, FSU Supply and Expense (S&E) costs cannot be separated out for the BCT AAS, CET AAS and CM BS. The data are tabulated in Appendix A for the three programs together. The S&E budget is marginally adequate to support the programs. Two major areas of concern exist. First, the programs are highly dependent on Voc Ed and year-end funds for equipment purchases. Voc Ed funding cannot be relied upon year after year. Year-end funds appear to be disappearing, given the new budget procedures in the Office of the Vice President for Academic Affairs. Second, faculty development funds are limited. The ACCE reaccreditation visiting team report (Appendix I) regarded the current budget as adequate, but expressed concern over the funding necessary for program growth, faculty development, and equipment acquisition and replacement.

SECTION 12
Conclusions

In the following statements, the BCT AAS, the CET AAS, and the CM BS are referred to collectively as "the programs." Statements pertinent to an individual program are so identified.

- The programs are individually and collectively central to the FSU mission.

- The programs provide a unique combination of true 2+2 programming. The American Council for Construction Education accredited CM BS is one of only 45 such programs nationwide, and one of only two in the State of Michigan. The programs generally enjoy good visibility among entering students and prospective employers. The visibility of the CET AAS and the Construction Management Highway/Bridge track BS needs improvement, although enrollments are on the rise.

- The programs serve the State of Michigan well with highly qualified graduates for the construction industry. The programs enjoy a close, very supportive relationship with major industry associations. The strong ties established through the Institute for Construction Education and Training between the programs, the Michigan Department of Transportation and the asphalt paving industry are important. Regional and national visibility is limited.

- Continued sustained and substantial enrollment growth in the programs indicates strong demand by students.

- Input from students, graduates, employers, the industry advisory committee and the accreditation process all indicate a high quality of instruction.

- Input from graduates, employers, and the industry advisory committee all indicate a high demand for graduates. This demand is founded on the strength of all facets of the programs and the preparation of the graduates to go to work as members of the construction technology and management team.

- Placement rates are 100% and starting salaries are competitive.

- The programs serve non-majors through CONM courses that are required in other programs and through ARCH and SURE courses taught by program faculty.

- Classroom and computer laboratory facilities and equipment are adequate. Construction laboratory facilities suffer from the lack of environmental controls. The programs need separate practices, soils, materials, and bituminous laboratories with a lecture area. Equipment is currently adequate, but a funded plan for equipment and computer replacement/acquisition is needed.

- Library information resources are adequate.

- The programs are among the lowest cost programs in the college, and rank in the middle on a university-wide basis.

- The faculty are highly qualified. Many faculty are deeply involved in non-teaching activities, but high teaching loads, large class sizes and programmatic demands restrict the time available for professional and scholarly pursuits.

- Administrative effectiveness is adequate.

- The student, graduate, employer and advisory committee surveys and the reaccreditation visiting team report all reinforce the need for continuous curriculum review and revision.

SECTION 13
Recommendations

- That the Construction Technology and Management programs be enhanced by the addition of one full-time tenure track faculty position, providing the opportunity for reduced class sizes, increased faculty professional development and scholarly activities, additional recruiting efforts and continued program growth.

- That the Civil Engineering Technology AAS and the Construction Management Highway/Bridge track BS be enhanced by developing, funding and conducting a targeted marketing and recruiting effort. This effort should also include expanding the visibility of all programs on a regional basis to neighboring states.

- That the faculty develop an equipment replacement/acquisition plan and appropriate funding be supported.

- That immediate program needs for upgraded construction laboratory space be met through the minor capital outlay program.

- That the program need for new Construction Technology and Management laboratories be included in the proposed College of Technology capital outlay project.

- That the faculty continue to review and revise the curriculum as appropriate to address the issues raised in the student, graduate, employer and advisory committee surveys and the reaccreditation visiting team report. This effort is currently in progress.

PROGRAM REVIEW PANEL EVALUATION

Program: BCT AAS, CET AAS, CM BS

Instructions: Circle the number which most closely describes the program you are evaluating.
(Number of responses for each value is in parenthesis next to the value).

1. Student Perception of Instruction **Average Score 4.4**

5 (3)	4 (4)	3 (0)	2 (0)	1 (0)
Currently enrolled students rate instructional effectiveness as extremely high.				Currently enrolled students rate the instructional effectiveness as below average.

2. Student Satisfaction with Program **Average Score 4.0**

5 (0)	4 (7)	3 (0)	2 (0)	1 (0)
Currently enrolled students are very satisfied with the program faculty, equipment, facilities, and curriculum.				Currently enrolled students are not satisfied with program faculty, equipment, facilities, or curriculum.

3. Advisory Committee Perceptions of Program **Average Score 4.4**

5 (3)	4 (4)	3 (0)	2 (0)	1 (0)
Advisory committee members perceive the program curriculum, facilities, and equipment to be of the highest quality.				Advisory committee members perceive the program curriculum, facilities, and equipment needs improvement.

4. Demand for Graduates **Average Score 4.9**

5 (6)	4 (1)	3 (0)	2 (0)	1 (0)
Graduates easily find employment in field.				Graduates are sometimes forced to find positions out of their field.

5. Use of Information on Labor Market* **Average Score 4.7**

5 (4)	4 (2)	3 (0)	2 (0)	1 (0)
The faculty and administrators use current data on labor market needs and emerging trends in job openings to systematically develop and evaluate the program.				The faculty and administrators do not use labor market data in planning or evaluating the program.

6. Use of Profession/Industry Standards* **Average Score 4.4**

5 (2)	4.3 (2)	4 (2)	3 (0)	2 (0)	1 (0)

Profession/industry standards (such as licensing, certification, accreditation) are consistently used in planning and evaluating this program and content of its courses.

Little or no recognition is given to specific profession/industry standards in planning and evaluating this program.

7. Use of Student Follow-up Information* **Average Score 4.0**

5 (2)	4.7 (1)	4 (2)	3 (1)	2 (1)	1 (0)

Current follow-up data on completers and leavers are consistently and systematically used in evaluating this program.

Student follow-up information has not been collected for use in evaluating this program.

8. Relevance of Supportive Courses* **Average Score 4.3**

5 (3)	4 (3)	3 (1)	2 (0)	1 (0)

Applicable supportive courses are closely coordinated with this program and are kept relevant to program goals and current to the needs of students.

Supportive course content reflects no planned approach to meeting needs of students in this program.

9. Qualifications of Administrators and Supervisors* **Average Score 3.9**

5 (3)	4 (1)	3 (2)	2 (1)	1 (0)

All persons responsible for directing and coordinating this program demonstrate a high level of administrative ability.

Persons responsible for directing and coordinating this program have little administrative training and experience.

10. Instructional Staffing* **Average Score 2.0**

5 (0)	4 (1)	3 (0)	2 (4)	1 (2)

Instructional staffing for this program is sufficient to permit optimum program effectiveness.

Staffing is inadequate to meet the needs of this program effectively.

11. Facilities **Average Score 2.2**

5 (0)	4 (0)	3.5 (1)	3 (1)	2 (4)	1 (1)

Present facilities are sufficient to support a high quality program.

Present facilities are a major problem for program quality.

12. Scheduling of Instructional Facilities* **Average Score 3.7**

5 (2)	4.5 (1)	4 (1)	3.3 (1)	3 (0)	2 (2)	1 (0)

Scheduling of facilities and equipment for this program is planned to maximize use and be consistent with quality instruction.

Facilities and equipment for this are significantly under-or-over scheduled.

13. Equipment **Average Score 3.6**

5 (0)	4 (4)	3.5 (1)	3 (2)	2 (0)	1 (0)

Present equipment is sufficient to support a high quality program.

Present equipment is not adequate and represents a threat to program quality.

14. Adaption of Instruction* **Average Score 4.2**

5 (3)	4 (3)	3 (0)	2.7 (1)	2 (0)	1 (0)

Instruction in all courses required for this program recognizes and responds to individual student interests, learning styles, skills, and abilities through a variety of instructional methods (such as, small group or individualized instruction, laboratory or "hands on" experiences, credit by examination).

Instructional approaches in this program do no consider individual student differences.

15. Adequate and Availability of Instructional Materials and Supplies **Average Score 3.6**

5 (0)	4 (4)	3 (3)	2 (0)	1 (0)

Faculty rate that the instructional materials and supplies as being readily available and in sufficient quantity to support quality instruction.

Faculty rate that the instructional materials are limited in amount, generally outdated, and lack relevance to program and student needs.

**Average score for all three programs, taken from faculty survey.*

Items 1, 2, 3, 4, 11, 13 and 15 from vote of PRP members only (one member not voting).

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: BCT, CET, CM

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE	7	7.5	7.5	6.5	6.5
Overload/Supplemental FTEF	1				
Adjunct FTEF				1	1
Enrollment on-campus total*	196	204	204	224	236
Freshman	50	45	58	58	59
Sophomore	37	56	43	30	53
Junior	39	35	33	39	44
Senior	41	41	46	52	41
Pre-Tech	29	27	24	45	39
Doctoral					
Enrollment off-campus*	2	13	16	21	22

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense	16,012	23,030	30,616	37,020	39,871
Equipment	21,743	3,817	5,536	16,758	9,770
Gifts & Grants		315			425,754
Cash Donations	2,565	7,197	4,714	6,525	11,383

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total					
- On campus					
- Off campus					
Placement of Graduates					
Average Salary					
Productivity - Academic Year Average	382	413	448	474	448
- Summer					
Summer Enrollment					

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: **BCT AAS**

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE					
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	106	88	71	55	62
Freshman	34	20	24	18	20
Sophomore	27	36	23	13	18
Junior	17	6	7	7	5
Senior	2	5	1	1	
Pre-Tech	26	21	16	16	19
Doctoral					
Enrollment off-campus*					

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense					
Equipment					
Gifts & Grants					
Cash Donations					

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total	18	23	18	22	9
- On campus	18	23	18	22	9
- Off campus					
Placement of Graduates	100%	100%	100%	100%	100%
Average Salary					
Productivity - Academic Year Average					
- Summer					
Summer Enrollment					

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: **CET AAS**

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE					
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	30	27	22	19	16
Freshman	9	9	5	4	5
Sophomore	10	6	8	7	3
Junior	8	8	2	3	5
Senior			3		
Pre-Tech	3	4	4	5	3
Doctoral					
Enrollment off-campus*					

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense					
Equipment					
Gifts & Grants					
Cash Donations					

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total	7	6	6	12	4
- On campus	7	6	6	12	4
- Off campus					
Placement of Graduates	100%	100%	100%	100%	100%
Average Salary					
Productivity - Academic Year Average					
- Summer					
Summer Enrollment					

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: CM BS

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE					
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	60	89	111	150	158
Freshman	7	16	29	36	34
Sophomore		14	12	10	32
Junior	14	21	24	29	34
Senior	39	36	42	51	41
Pre-Tech		2	4	24	17
Doctoral					
Enrollment off-campus*	2	13	16	21	22

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense					
Equipment					
Gifts & Grants					
Cash Donations					

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total	39	26	26	34	27
- On campus	38	25	26	32	27
- Off campus	1	1		2	
Placement of Graduates	100%	100%	100%	100%	100%
Average Salary	28,605	27,778	29,850	32,738	34,044
Productivity - Academic Year Average					
- Summer					
Summer Enrollment					

FERRIS STATE UNIVERSITY

July 15, 1998

«FN» «LN»
«company»
«add1»
«add2»
«add3»
«city», «st» «zip»

Dear «FN»,

FERRIS STATE *COULD* ENHANCE CONSTRUCTION PROGRAMS

WE NEED YOUR HELP!

The University is reviewing our Construction Programs for continued support. The result of this review can range from increasing our programs' resources to placing the program in a probationary status. This process requires your input.

The value of your diploma from FSU varies with time and is determined by the reputation of the Construction Programs. Help us to enhance the value of your degree by completing the enclosed survey and returning it by July 31, 1998.

In advance, we thank you for your quick response.

Very truly yours,

John R. Schmidt, Ph.D.
Associate Professor

Ken Reinink
Assistant Professor

encl.: Survey Post Card

Please take a few minutes to respond to the enclosed survey.

CONSTRUCTION AND FACILITIES DEPARTMENT
COLLEGE OF TECHNOLOGY
915 Campus Drive, Swan 312, Big Rapids, MI 49307-2291
Phone 616 592-2360 Fax 616 592-2931

Academic Program Review
Graduate Survey
(Side 1)

Please complete the following, fold in half, tape closed, and drop in the mail by July 31, 1998. (In the event that you do not receive this in a timely fashion, please respond immediately – regardless of date!) Enclose any *additional* comments that you may wish to express on a separate sheet. Thank you.

A. Education:

Name: _____

Degree(s) and Year(s) Received from Ferris State University:

BCT AAS - Year _____ CET AAS - Year _____ CM BS - Year _____

Other degrees, corresponding year received, and institutions since high school:

Degree	Year	College/University
_____	_____	_____
_____	_____	_____

B. Current Location Information:

Home Address Correction (if necessary):

_____

Home Phone: _____ Work Phone: _____

Company Name: _____

Position Title: _____

Company Address: _____

_____

E-Mail Address: _____

C. Initial Salary Range:

If you received an AAS in BCT or CET from Ferris, and then got a job based on that degree, please circle the range of your initial salary. *(Skip this question if you did NOT obtain a job based on a Ferris AAS in construction or if you continued school toward a BS degree in Construction Management.)*

below $20k	$25k to $30k	$35k to $40k	$45k to $50k
$20k to $25k	$30k to $35k	$40k to $45k	above $50k

If you continued your education beyond the first two years (or AAS) to receive a four-year CM BS, then got a job based on your BS degree, please circle the range of your initial salary. *(Skip this question if you did NOT obtain a job based on a Ferris CM BS.)*

below $20k	$25k to $30k	$35k to $40k	$45k to $50k
$20k to $25k	$30k to $35k	$40k to $45k	above $50k

D. Current Salary Range:

below $20k	$25k to $30k	$35k to $40k	$45k to $50k
$20k to $25k	$30k to $35k	$40k to $45k	above $50k

E. Career Avenue which most closely describes your daily activities (circle one):

Estimating	Scheduling	Field Supervision
Construction Management	Project Management	Company Management / Ownership
Marketing / Sales	Other (please describe): _____	

(Continued on back)

Construction Programs

APRC 1998-1999

Section 2 of 3

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

GRADUATE SURVEY RESULTS

Overall Responses

Graduate Survey (Side 2)

F. Scientific and Technical Topics for Your Career:

Mark the two columns next to each topic as follows:

RELEVANCE
Under Column A, rate the **relevance** of the topic to your career using:
5 = Very Important, 4 = Important, 3 = Relevant, 2 = Not Very Relevant, 1 = Unimportant

PREPARATION
Under Column B, rate the **preparation** that you received from your construction program using:
5 = Very Well Prepared, 4 = Well Prepared, 3 = Fairly Prepared, 2 = Barely Prepared, 1 = Poorly Prepared, N/A = Not Applicable

A	B		A	B	
3.5	3.2	Business Law	3.5	2.9	Marketing & Selling
4.7	3.7	Communication - Oral & Public Speaking	3.0	3.3	Materials Properties & Testing
4.5	3.7	Communication - Written	4.2	4.0	Mathematics
2.7	2.7	Computer Applications - CAD Software	3.9	3.0	Mechanical & Electrical Systems
4.2	3.8	Computer Applications - Office Software	2.6	2.8	Pavement Design & Construction
3.8	3.7	Computer Applications - Technical Software	2.8	3.0	Physics
4.2	3.9	Construction Administration	4.8	4.6	Plan Reading
4.5	3.9	Construction Practices	4.4	3.8	Productivity
4.6	4.1	Contracts & Specifications - Interpretation	4.6	4.2	Project Management
4.1	3.6	Contracts & Specifications - Writing	3.9	3.5	Quality Assurance & Quality Control
3.3	3.4	Economics - Construction	4.6	4.3	Safety
2.7	2.8	Economics - Macro	4.6	4.0	Scheduling
4.3	3.9	Estimating - Costing	3.8	3.6	Soils & Foundations
4.5	4.2	Estimating - Quantity Takeoffs	3.3	3.7	Statics & Strength of Materials
3.9	3.3	Field Engineering	3.4	3.5	Structural Analysis
3.9	3.8	Framing - Steel & Wood	4.6	3.8	Supervision
2.0	2.7	Highway Technology	3.4	3.5	Surveying
2.0	2.5	Hydraulics & Hydrology	3.6	3.5	Total Quality Management
3.6	3.4	Issues in Construction	3.9	3.6	Value Engineering

Average rate for Relevance (Column A):	3.8
Average rate for Preparation (Column B):	3.5
Maximum Delta for Preparation – Relevance:	4
Minimum Delta for Preparation – Relevance:	-2

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

GRADUATE SURVEY RESULTS

Building Construction Technology (BCT) Responses

Graduate Survey (Side 2)

F. Scientific and Technical Topics for Your Career:

Mark the two columns next to each topic as follows:

RELEVANCE
Under Column A, rate the **relevance** of the topic to your career using:
5 = Very Important, 4 = Important, 3 = Relevant, 2 = Not Very Relevant, 1 = Unimportant

PREPARATION
Under Column B, rate the **preparation** that you received from your construction program using:
5 = Very Well Prepared, 4 = Well Prepared, 3 = Fairly Prepared, 2 = Barely Prepared, 1 = Poorly Prepared, N/A = Not Applicable

A	B		A	B	
3.6	3.3	Business Law	3.5	2.9	Marketing & Selling
4.7	3.7	Communication - Oral & Public Speaking	2.8	3.5	Materials Properties & Testing
4.3	3.5	Communication - Written	4.2	4.1	Mathematics
2.6	2.2	Computer Applications - CAD Software	4.0	3.4	Mechanical & Electrical Systems
4.3	3.8	Computer Applications - Office Software	2.3	2.7	Pavement Design & Construction
3.8	3.9	Computer Applications - Technical Software	2.7	3.0	Physics
4.1	3.9	Construction Administration	4.9	4.6	Plan Reading
4.6	4.0	Construction Practices	4.5	3.8	Productivity
4.6	4.1	Contracts & Specifications - Interpretation	4.8	4.3	Project Management
4.0	3.4	Contracts & Specifications - Writing	3.9	3.5	Quality Assurance & Quality Control
3.3	3.3	Economics - Construction	4.6	4.3	Safety
2.7	2.8	Economics - Macro	4.7	3.9	Scheduling
4.4-	4.0	Estimating - Costing	3.6	3.6	Soils & Foundations
4.5	4.3	Estimating - Quantity Takeoffs	3.0	3.6	Statics & Strength of Materials
3.9	3.7	Field Engineering	3.2	3.6 .	Structural Analysis
4.2	4.1	Framing - Steel & Wood	4.7	3.8	Supervision
1.6	2.4	Highway Technology	3.5	3.8	Surveying
1.7	2.3	Hydraulics & Hydrology	3.7	3.6	Total Quality Management
3.7	3.3	Issues in Construction	3.8	3.4	Value Engineering

Average rate for Relevance (Column A):	3.8
Average rate for Preparation (Column B):	3.6
Maximum Delta for Preparation – Relevance:	3
Minimum Delta for Preparation – Relevance:	-1

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

GRADUATE SURVEY RESULTS

Civil Engineering Technology (CET) Responses

Graduate Survey (Side 2)

F. Scientific and Technical Topics for Your Career:

Mark the two columns next to each topic as follows:

RELEVANCE
Under Column A, rate the **relevance** of the topic to your career using:
5 = Very Important, 4 = Important, 3 = Relevant, 2 = Not Very Relevant, 1 = Unimportant

PREPARATION
Under Column B, rate the **preparation** that you received from your construction program using:
5 = Very Well Prepared, 4 = Well Prepared, 3 = Fairly Prepared, 2 = Barely Prepared, 1 = Poorly Prepared, N/A = Not Applicable

A	B		A	B	
3.5	3.2	Business Law	3.3	2.5	Marketing & Selling
4.8	3.7	Communication - Oral & Public Speaking	3.7	3.3	Materials Properties & Testing
4.8	3.4	Communication - Written	4.3	3.7	Mathematics
2.8	2.8	Computer Applications - CAD Software	2.8	2.0	Mechanical & Electrical Systems
4.3	3.5	Computer Applications - Office Software	3.7	3.7	Pavement Design & Construction
3.5	2.5	Computer Applications - Technical Software	3.3	3.5	Physics
4.3	3.7	Construction Administration	4.7	4.7	Plan Reading
4.3	3.8	Construction Practices	4.5	4.0	Productivity
4.7	4.0	Contracts & Specifications - Interpretation	4.7	4.0	Project Management
4.2	3.7	Contracts & Specifications - Writing	3.7	3.4	Quality Assurance & Quality Control
3.5	4.0	Economics - Construction	4.7	3.6	Safety
3.0	2.6	Economics - Macro	4.3	4.0	Scheduling
3.8	3.2	Estimating - Costing	4.3	3.3	Soils & Foundations
4.6	3.8	Estimating - Quantity Takeoffs	3.5	2.7	Statics & Strength of Materials
4.6	3.6	Field Engineering	3.7	3.2	Structural Analysis
2.0	3.0	Framing - Steel & Wood	4.2	3.7	Supervision
4.2	4.0	Highway Technology	3.8	4.0	Surveying
3.8	3.0	Hydraulics & Hydrology	3.0	3.0	Total Quality Management
3.4	3.5	Issues in Construction	4.0	3.5	Value Engineering

Average rate for Relevance (Column A):	3.9
Average rate for Preparation (Column B):	3.5
Maximum Delta for Preparation – Relevance:	3
Minimum Delta for Preparation – Relevance:	0

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

GRADUATE SURVEY RESULTS

Construction Management (CM) Responses

Graduate Survey (Side 2)

F. Scientific and Technical Topics for Your Career:

Mark the two columns next to each topic as follows:

RELEVANCE

Under Column A, rate the **relevance** of the topic to your career using:
5 = Very Important, 4 = Important, 3 = Relevant, 2 = Not Very Relevant, 1 = Unimportant

PREPARATION

Under Column B, rate the **preparation** that you received from your construction program using:
5 = Very Well Prepared, 4 = Well Prepared, 3 = Fairly Prepared, 2 = Barely Prepared, 1 = Poorly Prepared, N/A = Not Applicable

A	B		A	B	
3.5	3.2	Business Law	3.6	3.0	Marketing & Selling
4.7	3.7	Communication - Oral & Public Speaking	3.0	3.3	Materials Properties & Testing
4.5	3.7	Communication - Written	4.2	4.0	Mathematics
2.5	2.8	Computer Applications - CAD Software	3.9	3.0	Mechanical & Electrical Systems
4.2	4.0	Computer Applications - Office Software	2.6	2.8	Pavement Design & Construction
3.8	3.9	Computer Applications - Technical Software	2.7	3.0	Physics
4.2	4.0	Construction Administration	4.8	4.6	Plan Reading
4.5	3.9	Construction Practices	4.4	3.8	Productivity
4.7	4.1	Contracts & Specifications - Interpretation	4.6	4.3	Project Management
4.2	3.7	Contracts & Specifications - Writing	3.9	3.6	Quality Assurance & Quality Control
3.3	3.5	Economics - Construction	4.6	4.3	Safety
2.8	2.9	Economics - Macro	4.6	4.1	Scheduling
4.3	4.0	Estimating - Costing	3.8	3.7	Soils & Foundations
4.5	4.3	Estimating - Quantity Takeoffs	3.3	3.7	Statics & Strength of Materials
3.9	3.3	Field Engineering	3.3	3.6	Structural Analysis
3.7	3.6	Framing - Steel & Wood	4.6	3.9	Supervision
1.9	2.7	Highway Technology	3.3	3.5	Surveying
1.9	2.6	Hydraulics & Hydrology	3.6	3.6	Total Quality Management
3.6	3.5	Issues in Construction	4.0	3.7	Value Engineering

Average rate for Relevance (Column A):	3.8
Average rate for Preparation (Column B):	3.6
Maximum Delta for Preparation – Relevance:	4
Minimum Delta for Preparation – Relevance:	-2

Average BS CM Graduate Starting Salary:

Academic Year 1993-94 (May 1994 graduates only):	**$28,605**
Academic Year 1994-95:	**$27,778**
Academic Year 1995-96:	**$29,850**
Academic Year 1996-97:	**$32,738**
Academic Year 1997-98:	**$34,044**

BS CM Employment Rate: 100% of the graduates who actively sought employment and who responded to the graduate survey were successful.

June 8, 1998

«EMPLOYER»
«ADDRESS»
«ADDRESS2»
«CITY», «ST» «ZIPCODE»

Sir/Madam:

The University is currently conducting an academic review of our construction programs. Therefore, we require your input concerning our graduates from our Bachelor of Science Construction Management, Associate in Applied Science, Building Construction Technology and Associate in Applied Science, Civil Engineering Technology programs.

Your firm was identified by a recent graduate as their first employer, so please, help us to enhance the construction programs by completing the enclosed survey(s) and returning it (them) by June 30, 1998 using the enclosed return envelope. There are two surveys, one for BSCM graduates and one for AAS(BCT) and AAS (CET) graduates.

Finally, do you as an employer currently participate or desire to participate in one of the following activities:

	Yes	No
Serve on an advisory committee	☐	☐
Placement of students in summer employment	☐	☐
Would you hire another graduate from one of our construction programs	☐	☐

May we contact you for participation on any of the activities listed above? (Yes or No)

Name _____ Title _____

Company _____ Telephone _____

Address _____

City _____ State _____ Zip _____

Sincerely,

Edward Brayton
Professor
616/592-2370

Lee Templin
Assistant Professor
616/592-3586

EMPLOYER SURVEY - ASSOCIATE DEGREES

If you have hired any of our students with an Associate in Applied Science in Building Construction Technology or Civil Engineering Technology, please circle the appropriate degree program that the employee graduated from and state the year of graduation for the student and complete the survey below.

Program Degree	**Building Construction Associate Degree**	**Civil Technology Associate Degree**	**Graduation Year** _____

Your cooperation is needed to make sure that our graduates are receiving both the technical education and foundation skills that are essential for good job performance.

Please rate the overall performance of the individual in the following technical/skill areas on the following scale.

	Competencies and Foundation Skills	EXCELLENT	GOOD	AVERAGE	BELOW AVERAGE	POOR	DON'T KNOW
1.	Uses written and oral communication skills effectively	5	4	3	2	1	NA
2.	Possesses adequate technical skills (Estimating, Cost Control, Scheduling)	5	4	3	2	1	NA
3.	Possesses adequate mathematical skills	5	4	3	2	1	NA
4.	Uses critical thinking, problem solving and decision making skills	5	4	3	2	1	NA
5.	Exhibits an appropriate level of responsibility and self management	5	4	3	2	1	NA
6.	Chooses ethical courses of action	5	4	3	2	1	NA
7.	Identifies, organizes, plans, and allocates resources	5	4	3	2	1	NA
8.	Participates as a team player	5	4	3	2	1	NA
9.	Works well with individuals from diverse backgrounds	5	4	3	2	1	NA
10.	Acquires, interprets and uses information effectively	5	4	3	2	1	NA
11.	Possesses the ability to gain rapport with clients	5	4	3	2	1	NA
12.	Uses technologies effectively (e.g., computers, telecommunication)	5	4	3	2	1	NA
13.	Possesses leadership and negotiation skills.	5	4	3	2	1	NA

EMPLOYERS SURVEY - BACHELOR DEGREE

If you have hired any of our students with a Bachelor of Science in Construction Management, please state the year of graduation for the student and complete the survey below complete the survey below.

Program	**Construction Management**	**Graduation**	
Degree	**Bachelor Degree**	**Year**	_____

Your cooperation is needed to make sure that our graduates are receiving both the technical education and foundation skills that are essential for good job performance.

Please rate the overall performance of the individual in the following technical/skill areas on the following scale.

	Competencies and Foundation Skills	5	4	3	2	1	NA
1.	Uses written and oral communication skills effectively	5	4	3	2	1	NA
2.	Possesses adequate technical skills (Estimating, Cost Control, Scheduling)	5	4	3	2	1	NA
3.	Possesses adequate mathematical skills	5	4	3	2	1	NA
4.	Uses critical thinking, problem solving and decision making skills	5	4	3	2	1	NA
5.	Exhibits an appropriate level of responsibility and self management	5	4	3	2	1	NA
6.	Chooses ethical courses of action	5	4	3	2	1	NA
7.	Identifies, organizes, plans, and allocates resources	5	4	3	2	1	NA
8.	Participates as a team player	5	4	3	2	1	NA
9.	Works well with individuals from diverse backgrounds	5	4	3	2	1	NA
10.	Acquires, interprets and uses information effectively	5	4	3	2	1	NA
11.	Possesses the ability to gain rapport with clients	5	4	3	2	1	NA
12.	Uses technologies effectively (e.g., computers, telecommunication)	5	4	3	2	1	NA
13.	Possesses leadership and negotiation skills.						

EXCELLENT GOOD AVERAGE BELOW AVERAGE POOR DON'T KNOW

SUMMARY SHEET E
Fresh + Soph.
CETM + CMCT's

INSTRUCTIONS FOR COMPLETING THE STUDENT EVALUATION FORM:

Each student is to complete both sides of this sheet and return to the instructor as directed.

Indicate below the program and academic year that you are enrolled for this semester by checking the appropriate box.

PROGRAM:

- ☐ BCTM: AAS, Building Construction Technology
- ☐ CETM: AAS, Civil Engineering Technology
- ☐ CMBT: BS, Construction Management, Commercial / Industrial Track
- ☐ CMCT: BS, Construction Management, Highway / Bridge Track

ACADEMIC YEAR:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior

Answer the questions on the reverse side of this sheet by circling the number that best describes your perception of the question about the Construction Technology and Management Program in which you are enrolled. You may circle N/A if you do not believe that the question applies to you or that you do not have enough information to respond to that question.

To insure that your answers are confidential, remove the cover sheet and fold this sheet at the dotted line before returning the questionnaire to the instructor.

CET'S

STUDENT PERCEPTIONS OF THEIR PROGRAM:	Excellent		Average		Poor	N/A	Ave Score
COURSES IN YOUR PROGRAM AREA ARE:							
1. Available and conveniently located.	5	4	3	2	1	?	4.0
2. Based on realistic prerequisites.	5	4	3	2	1	?	3.8
WRITTEN OBJECTIVES FOR COURSES IN YOUR PROGRAM:							
3. Are available to students.	5	4	3	2	1	?	3.91
4. Describe what you will learn in the course.	5	4	3	2	1	?	3.82
5. Are used by the instructor to keep you aware of your progress.	5	4	3	2	1	?	3.73
TEACHING METHODS, PROCEDURES AND COURSE CONTENT:							
6. Meet your projected career needs, interests and objectives.	5	4	3	2	1	?	3.82
7. Provide supervised practice for developing skills.	5	4	3	2	1	?	4.0
PROGRAM FACULTY:							
8. Know the subject matter and occupational requirements.	5	4	3	2	1	?	4.4
9. Are available to provide help when needed.	5	4	3	2	1	?	4.55
10. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	4.09
RELATED COURSE FACULTY (such as English, math, science):							
11. Know the subject matter and occupational requirements.	5	4	3	2	1	?	3.64
12. Are available to provide help when needed.	5	4	3	2	1	?	3.73
13. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	3.27
PROGRAM COMPUTER LABORATORIES:							
14. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	3.91
15. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.27
16. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.09
17. Are available on an equal basis for all students.	5	4	3	2	1	?	3.73
OTHER PROGRAM LABORATORIES:							
18. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	3.82
19. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.64
20. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.73
21. Are available on an equal basis for all students.	5	4	3	2	1	?	3.64
CLASS ROOMS:							
22. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.09
23. Include enough seats/tables for students enrolled.	5	4	3	2	1	?	4.09
24. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.91
25. Are available on an equal basis for all students.	5	4	3	2	1	?	4.0
PROGRAM INSTRUCTIONAL EQUIPMENT IS:							
26. Current and representative of industry.	5	4	3	2	1	?	3.64
27. In sufficient quantity to avoid long delays in use.	5	4	3	2	1	?	3.64
28. Safe and in good condition.	5	4	3	2	1	?	4.0
INSTRUCTIONAL MATERIALS (i.e., textbooks, reference books, etc.) ARE:							
29. Current and meaningful to the subject.	5	4	3	2	1	?	4.0
30. Available and conveniently located for use.	5	4	3	2	1	?	3.73
INSTRUCTIONAL SUPPORT SERVICES (tutoring, lab assistance, etc.) ARE:							
31. Available to meet your needs and interests.	5	4	3	2	1	?	4.0
32. Provided by knowledgeable, interested staff.	5	4	3	2	1	?	3.91
PLACEMENT SERVICES ARE AVAILABLE TO:							
33. Help you find employment opportunities.	5	4	3	2	1	?	4.44
34. Prepare you to apply for a job.	5	4	3	2	1	?	4.44

COMMENTS: _____

_____

_____

Summary Sheet
Fresh + Soph
BCTM + CMBT

INSTRUCTIONS FOR COMPLETING THE STUDENT EVALUATION FORM:

Each student is to complete both sides of this sheet and return to the instructor as directed.

Indicate below the program and academic year that you are enrolled for this semester by checking the appropriate box.

PROGRAM:

- ☐ BCTM: AAS, Building Construction Technology
- ☐ CETM: AAS, Civil Engineering Technology
- ☐ CMBT: BS, Construction Management, Commercial / Industrial Track
- ☐ CMCT: BS, Construction Management, Highway / Bridge Track

ACADEMIC YEAR:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior

Answer the questions on the reverse side of this sheet by circling the number that best describes your perception of the question about the Construction Technology and Management Program in which you are enrolled. You may circle N/A if you do not believe that the question applies to you or that you do not have enough information to respond to that question.

To insure that your answers are confidential, remove the cover sheet and fold this sheet at the dotted line before returning the questionnaire to the instructor.

BCT's

STUDENT PERCEPTIONS OF THEIR PROGRAM:

	Excellent		Average		Poor	N/A	Ave.
COURSES IN YOUR PROGRAM AREA ARE:							
1. Available and conveniently located.	5	4	3	2	1	?	3.97
2. Based on realistic prerequisites.	5	4	3	2	1	?	3.86
WRITTEN OBJECTIVES FOR COURSES IN YOUR PROGRAM:							
3. Are available to students.	5	4	3	2	1	?	3.97
4. Describe what you will learn in the course.	5	4	3	2	1	?	4.07
5. Are used by the instructor to keep you aware of your progress.	5	4	3	2	1	?	3.68
TEACHING METHODS, PROCEDURES AND COURSE CONTENT:							
6. Meet your projected career needs, interests and objectives.	5	4	3	2	1	?	4.00
7. Provide supervised practice for developing skills.	5	4	3	2	1	?	4.05
PROGRAM FACULTY:							
8. Know the subject matter and occupational requirements.	5	4	3	2	1	?	4.34
9. Are available to provide help when needed.	5	4	3	2	1	?	4.28
10. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	3.86
RELATED COURSE FACULTY (such as English, math, science):							
11. Know the subject matter and occupational requirements.	5	4	3	2	1	?	3.72
12. Are available to provide help when needed.	5	4	3	2	1	?	3.77
13. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	3.38
PROGRAM COMPUTER LABORATORIES:							
14. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.16
15. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.40
16. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.42
17. Are available on an equal basis for all students.	5	4	3	2	1	?	3.73
OTHER PROGRAM LABORATORIES:							
18. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.18
19. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.78
20. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.91
21. Are available on an equal basis for all students.	5	4	3	2	1	?	3.75
CLASS ROOMS:							
22. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.14
23. Include enough seats/tables for students enrolled.	5	4	3	2	1	?	3.84
24. Are safe, functional, and well maintained.	5	4	3	2	1	?	4.14
25. Are available on an equal basis for all students.	5	4	3	2	1	?	4.12
PROGRAM INSTRUCTIONAL EQUIPMENT IS:							
26. Current and representative of industry.	5	4	3	2	1	?	3.75
27. In sufficient quantity to avoid long delays in use.	5	4	3	2	1	?	3.71
28. Safe and in good condition.	5	4	3	2	1	?	4.07
INSTRUCTIONAL MATERIALS (i.e., textbooks, reference books, etc.) ARE:							
29. Current and meaningful to the subject.	5	4	3	2	1	?	3.61
30. Available and conveniently located for use.	5	4	3	2	1	?	3.60
INSTRUCTIONAL SUPPORT SERVICES (tutoring, lab assistance, etc.) ARE:							
31. Available to meet your needs and interests.	5	4	3	2	1	?	3.87
32. Provided by knowledgeable, interested staff.	5	4	3	2	1	?	3.88
PLACEMENT SERVICES ARE AVAILABLE TO:							
33. Help you find employment opportunities.	5	4	3	2	1	?	4.17
34. Prepare you to apply for a job.	5	4	3	2	1	?	4.15

COMMENTS: _____

_____

_____

SUMMARY SHEET
JUNIOR + SENIOR
CONST. MGMT.

INSTRUCTIONS FOR COMPLETING THE STUDENT EVALUATION FORM:

Each student is to complete both sides of this sheet and return to the instructor as directed.

Indicate below the program and academic year that you are enrolled for this semester by checking the appropriate box.

PROGRAM:

- ☐ BCTM: AAS, Building Construction Technology
- ☐ CETM: AAS, Civil Engineering Technology
- ☐ CMBT: BS, Construction Management, Commercial / Industrial Track
- ☐ CMCT: BS, Construction Management, Highway / Bridge Track

ACADEMIC YEAR:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior

Answer the questions on the reverse side of this sheet by circling the number that best describes your perception of the question about the Construction Technology and Management Program in which you are enrolled. You may circle N/A if you do not believe that the question applies to you or that you do not have enough information to respond to that question.

To insure that your answers are confidential, remove the cover sheet and fold this sheet at the dotted line before returning the questionnaire to the instructor.

CM's

STUDENT PERCEPTIONS OF THEIR PROGRAM:

	Excellent		Average		Poor	N/A	Ave
COURSES IN YOUR PROGRAM AREA ARE:							
1. Available and conveniently located.	5	4	3	2	1	?	4.08
2. Based on realistic prerequisites.	5	4	3	2	1	?	4.05
WRITTEN OBJECTIVES FOR COURSES IN YOUR PROGRAM:							
3. Are available to students.	5	4	3	2	1	?	4.21
4. Describe what you will learn in the course.	5	4	3	2	1	?	4.11
5. Are used by the instructor to keep you aware of your progress.	5	4	3	2	1	?	3.88
TEACHING METHODS, PROCEDURES AND COURSE CONTENT:							
6. Meet your projected career needs, interests and objectives.	5	4	3	2	1	?	4.24
7. Provide supervised practice for developing skills.	5	4	3	2	1	?	4.12
PROGRAM FACULTY:							
8. Know the subject matter and occupational requirements.	5	4	3	2	1	?	4.59
9. Are available to provide help when needed.	5	4	3	2	1	?	4.52
10. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	4.06
RELATED COURSE FACULTY (such as English, math, science):							
11. Know the subject matter and occupational requirements.	5	4	3	2	1	?	3.77
12. Are available to provide help when needed.	5	4	3	2	1	?	3.65
13. Provide instruction so it is interesting and understandable.	5	4	3	2	1	?	3.39
PROGRAM COMPUTER LABORATORIES:							
14. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.02
15. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.48
16. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.17
17. Are available on an equal basis for all students.	5	4	3	2	1	?	3.59
OTHER PROGRAM LABORATORIES:							
18. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	4.01
19. Include enough work stations for students enrolled.	5	4	3	2	1	?	3.99
20. Are safe, functional, and well maintained.	5	4	3	2	1	?	3.86
21. Are available on an equal basis for all students.	5	4	3	2	1	?	3.95
CLASS ROOMS:							
22. Provide adequate lighting, ventilation, etc.	5	4	3	2	1	?	3.98
23. Include enough seats/tables for students enrolled.	5	4	3	2	1	?	3.92
24. Are safe, functional, and well maintained.	5	4	3	2	1	?	4.06
25. Are available on an equal basis for all students.	5	4	3	2	1	?	4.06
PROGRAM INSTRUCTIONAL EQUIPMENT IS:							
26. Current and representative of industry.	5	4	3	2	1	?	3.76
27. In sufficient quantity to avoid long delays in use.	5	4	3	2	1	?	3.83
28. Safe and in good condition.	5	4	3	2	1	?	3.87
INSTRUCTIONAL MATERIALS (i.e., textbooks, reference books, etc.) ARE:							
29. Current and meaningful to the subject.	5	4	3	2	1	?	3.87
30. Available and conveniently located for use.	5	4	3	2	1	?	3.81
INSTRUCTIONAL SUPPORT SERVICES (tutoring, lab assistance, etc.) ARE:							
31. Available to meet your needs and interests.	5	4	3	2	1	?	3.67
32. Provided by knowledgeable, interested staff.	5	4	3	2	1	?	3.68
PLACEMENT SERVICES ARE AVAILABLE TO:							
33. Help you find employment opportunities.	5	4	3	2	1	?	3.99
34. Prepare you to apply for a job.	5	4	3	2	1	?	4.07

COMMENTS: _____

_____

_____

Student Survey Written Comments

More classes need to be offered more than once a year for students that transfer into the program in order to keep a consistent schedule.

The program is excellent.

Math department needs help.

There is most need to improve Swan 101 computer lab. We need new estimating software/other programs need to be kept operational and maintained.

Overall the faculty of this university are very caring. Although they are very busy, they will still find the time to listen to your concerns.

Overall, a very good program, with an excellent program faculty.

I bought 5 textbooks this semester and could have gotten by using 0 of them. This is ridiculous.

I find it difficult to find tutors for construction classes.

Some of the instructors need to teach more and babble less; they also need to teach all portions of the class such as computer software.

Excellent program and instruction. Request summer evening classes for construction management at the FSU-Grand Rapids Tech Center.

Reference books: Almost all are at circulation desk by instructor's personal library. Not to leave library.

This program needs better computer facilities and software, and the computer support technicians need more software training.

Need more alumni contact.

Our computer lab needs to be updated and open longer hours. Employment opportunities are good, but networking to larger companies internationally needs to be considered. Related courses need to be geared more towards our field of study for better understanding and interest. Overall the program is excellent and the faculty is professional and informative.

Swan 101 computer lab could use some needed improvements that involve funding, i.e. lab hours and availability.

Placement services doesn't get a lot of companies. Companies usually go through dept.
Computer lab needs to be updated.
Excellent program, excellent instructors and an excellent curriculum.

Framing lab needs to be updated.

I feel that this is a very good program. The classes are very career oriented. The only problem that I have with the program is the reference materials used in CONM 321, CONM 222 and HVAC are out of date and need to be reviewed to make the material more clear.

The computer lab is in such heavy use by instructors that there are few open time periods for students to complete homework. Any equipment used is extremely outdated, and any up to date equipment we do have the faculty is lacking knowledge on how to operate and often never takes it out of the store room.

Construction lab hours could be extended, especially at night.

In my years in the program I don't have any complaints on the department, However, the only problem I have is with the organization of the university in coordination with financial aid, student loans, and bills due before scheduling.

I've just recently enrolled into the BCTM construction management program, am I am not completely familiar with all the things mentioned above. I'm sure I will be, however.

Tutorial services should have tutors available for specific construction classes. The construction program needs to update materials for gen. practices labs. Create resource library for const program for research.

CM program was well worth the money ($$). I enjoyed the instructors and their expert opinions.

Good program/The best.

The adjunct teachers are the only low point of the program. Labs should include more field awareness. What we a learning in class we should also be able to see it demonstrated in real life situations. We need to get out on more job sites to have first hand experience with what is being taught in the classroom.

The CM program is a good start. Having worked in the field, this program is effective in preparing students.

(Placement Services) Most construction companies go through faculty and department so they are just not helpful with our needs. The resume expert is too plain.

Wish the program would touch more on building dams, hydro and bridges, needs more how to do and engineering courses. Library has a poor source of materials for this program. Is not user friendly or convenient.

I would like to see more night classes available.
This course is knowledgeable about the industry, but how can students prepare themselves for a real life situation when Ferris won't even provide our BCTM wood and steel framing class with new lumber? We have to continue to use old, crippled and warped crap that even a rocking chair maker could not use. Why, you receive enough money from me! Why is it that I can't find a decent scholarship for my program? I have to pay cash every semester out of my pocket and I have lived here all my life and have always had great grades!

Computer labs are always full and they never work right.

Tutors good, lab assistance bad.

The tutoring service on campus should recognize that tutors are needed for college of technology. They should supply a better service.

Ferris has a great faculty in the construction department.

I'm not coming back.

This is an excellent program with very few problems. We must take into account the growing size of the students.

I really enjoy the construction program and would be pleased to see it expand to a higher level. (Pos masters program.) Also, appreciate the instructors especially those that have experience in field environment. I have also referred the construction program to others, family and friends.

I wish that teachers were screened for proper English and how clearly they speak. (Too many math teachers with poor English.) Need to update plans for Mr. Brayton's estimating class. They are starting to get hard to read and see information clearly. Other than that I feel that I am getting a good education.

Enhance the program.

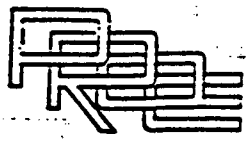
Needs better chairs in 301.

Some instructors in other courses (i.e. math) are too hard to understand, because of the accents.

Textbooks are too expensive and you can't get any money back for returns. Also some teachers are too cocky considering that we pay for their salaries.

The program is great. I went to another college for two yrs. And got sick of it. I almost dropped out. But then I came here. I love it and am very interested in this program.

APPENDIX F



COLLEGE SUMMARY SHEET
BCT

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

INSTRUCTIONS TO RESPONDENTS

On the following pages you are asked to give your perceptions of your occupational program (such as registered nursing, automotive technology, secretarial science). The items you are asked to rate are grouped into the major components of the Program Review in Occupational Education (PROE) system, namely:

- Goals and Objectives
- Processes
- Resources

Rate each item by checking your best judgment on a five point scale ranging from poor to excellent. Only check one answer per item. A "Don't Know" column has been provided in the event you really don't have sufficient information to rate an item. Space has been provided for you to note comments that may help to clarify your ratings or to indicate modifications of a standard to make it more relevant for your program.

Criteria for excellent and poor ratings are provided for each item. *Excellent* represents a nearly ideal or exemplary situation; *poor*, one of serious inadequacy. As a guide, ratings may be made with the following in mind:

EXCELLENT means ideal, top 5 to 10%
GOOD is a strong rating, top 1/3rd
ACCEPTABLE is average, the middle 1/3rd
BELOW EXPECTATIONS is only fair, bottom 1/3rd
POOR is seriously inadequate, bottom 5 to 10%

This form may be completed as a *consensus* evaluation by the principal persons involved with a specific occupational program. Examples of such persons would be instructors, department or division chairpersons, program coordinators, and administrators such as occupational dean. If preferred, respondents may complete individual forms.

To help with tabulation of responses, please provide the information requested below before completing your rating.

PROGRAM TITLE BUILDING CONST TECH USOE CODE # ___.___ ___ ___ ___ ___ ___

PERSONS PARTICIPATING IN CONSENSUS EVALUATION OR INDIVIDUAL COMPLETING THIS FORM:

Name _____ Title _____

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES									
1. Participation in Development of College Occupational Education Program Plan *Excellent*—Administrators and/or other supervisory personnel involved in developing and revising the college plan for this occupational program seek and respond to faculty, student and community input. *Poor*—Development of the plan for this program is basically the work of one or two persons in the college.	1								4.5 AVE
2. Program Goals *Excellent*—Written goals for this program state realistic outcomes (such as planned enrollments, completions, placements) and are used as one measure of program effectiveness. *Poor*—No written goals exist for this program.	2								4.5 AVE
3. Course Objectives *Excellent*—Written measurable objectives have been developed for all occupational courses in this program and are used to plan and organize instruction. *Poor*—No written objectives have been developed for courses in this program.	3								4.3 AVE
4. Competency Based Performance Objectives *Excellent*—Competency based performance objectives are on file in writing, consistent with employment standards, and tell students what to expect and help faculty pace instruction. *Poor*—Competency based performance objectives have not been developed for courses in this program.	4								3.6 AVE
5. Use of Competency Based Performance Objectives *Excellent*—Competency based performance objectives are distributed to students and used to assess student progress. *Poor*—Competency based performance objectives are not used with students for progress evaluation nor are students aware that they exist.	5								3.4 AVE
6. Use of Information on Labor Market Needs *Excellent*—Current data on labor market needs and emerging trends in job openings are systematically used in developing and evaluating this program. *Poor*—Labor market data is not used in planning or evaluation.	6								4.6 AVE
7. Use of Information on Job Performance Requirements *Excellent*—Current data on job performance requirements and trends are systematically used in developing and evaluating this program and content of its courses. *Poor*—Job performance requirements information has not been collected for use in planning and evaluating.	7								4.2 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS		Keypunch Instructions / Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES (Continued)								
8. Use of Profession/Industry Standards *Excellent*—Profession/industry standards (such as licensing, certification, accreditation) are consistently used in planning and evaluating this program and content of its courses. *Poor*—Little or no recognition is given to specific profession/industry standards in planning and evaluating this program.	8							4.3 AVE.
9. Use of Student Follow-Up Information *Excellent*—Current follow-up data on completers and leavers (students with marketable skills) are consistently and systematically used in evaluating this program. *Poor*—Student follow-up information has not been collected for use in evaluating this program.	9							3.7 AVE
PROCESSES								
10. Adaptation of Instruction *Excellent*—Instruction in all courses required for this program recognizes and responds to individual student interests, learning styles, skills, and abilities through a variety of instructional methods (such as small group or individualized instruction, laboratory or "hands on" experiences, open entry/open exit, credit by examination). *Poor*—Instructional approaches in this program do not consider individual student differences.	10							4.0 AVE
11. Relevance of Supportive Courses *Excellent*—Applicable supportive courses (such as anatomy and physiology, technical communications, technical mathematics) are closely coordinated with this program and are kept relevant to program goals and current to the needs of students. *Poor*—Supportive course content reflects no planned approach to meeting needs of students in this program.	11							4.3 AVE
12. Coordination with Other Community Agencies and Educational Programs. *Excellent*—Effective liaison is maintained with other programs and educational agencies and institutions (such as high schools, other community colleges, four year colleges, area vocational schools, proprietary schools, CETA) to assure a coordinated approach and to avoid duplication in meeting occupational needs of the area or community. *Poor*—College activities reflect a disinterest in coordination with other programs and agencies having impact on this program.	12							4.0 AVE
13. Provision for Work Experience, Cooperative Education or Clinical Experience. *Excellent*—Ample opportunities are provided for related work experience, cooperative education, or clinical experience for students in this program. Student participation is well coordinated with classroom instruction and employer supervision. *Poor*—Few opportunities are provided in this program for related work experience, cooperative education, or clinical experience where such participation is feasible.	13							3.7 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Response/Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
14. Program Availability and Accessibility *Excellent*—Students and potential students desiring enrollment in this program are identified through recruitment activities, treated equally in enrollment selection, and not discouraged by unrealistic prerequisites. The program is readily available and accessible at convenient times and locations. *Poor*—This program is not available or accessible to most students seeking enrollment. Discriminatory selection procedures are practiced.	14								4.7 AVG
15. Provision for the Disadvantaged *Excellent*—Support services are provided for disadvantaged (such as socioeconomic, cultural, linguistic, academic) students enrolled in this program. Services are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services are provided for disadvantaged students enrolled in this program.	15								4.75 AVG
16. Provision for the Handicapped. *Excellent*—Support services are provided for handicapped (physical, mental, emotional, and other health impairing handicaps) students enrolled in this program. Facilities and equipment adaptations are made as needed. Services and facilities modifications are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services or facilities and equipment modifications are available for handicapped students enrolled in this program.	16								4.5 AVG
17. Efforts to Achieve Sex Equity *Excellent*—Emphasis is given to eliminating sex bias and sex stereotyping in this program: staffing, student recruitment, program advisement, and career counseling; access to and acceptance in programs; selection of curricular materials; instruction; job development and placement. *Poor*—Almost no attention is directed toward achieving sex equity in this program.	17								5.0 AVG
18. Provision for Program Advisement *Excellent*—Instructors or other qualified personnel advise students (day, evening, weekend) on program and course selection. Registration procedures facilitate course selection and sequencing. *Poor*—Instructors make no provision for advising students on course and program selection.	18								4.3 AVG
19. Provision for Career Planning and Guidance *Excellent*—Day, evening, and weekend students in this program have ready access to career planning and guidance services. *Poor*—Little or no provision is made for career planning and guidance services for students enrolled in this program.	19								3.8 AVG

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Requires Instruction 1	Poor 2	Below Expectations 3	Acceptable 4	Good 5	Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
20. Adequacy of Career Planning and Guidance *Excellent*—Instructors or other qualified personnel providing career planning and guidance services have current and relevant occupational knowledge and use a variety of resources (such as printed materials, audiovisuals, job observation) to meet individual student career objectives. *Poor*—Career planning and guidance services are ineffective and staffed with personnel who have little occupational knowledge.	20								4.4 AVE
21. Provision for Employability Information. *Excellent*—This program includes information which is valuable to students as employees (on such topics as employment opportunities and future potential, starting salary, benefits, responsibilities and rights). *Poor*—Almost no emphasis is placed on providing information important to students as employees.	21								4.8 AVE
22. Placement Effectiveness for Students in this Program *Excellent*—The college has an effectively functioning system for locating jobs and coordinating placement for students in this program. *Poor*—The college has no system or an ineffective system for locating jobs and coordinating placement for occupational students enrolled in this program.	22								4.5 AVE
23. Student Follow-up System *Excellent*—Success and failure of program leavers and completers are assessed through periodic follow-up studies. Information learned is made available to instructors, students, advisory committee members and others concerned (such as counselors) and is used to modify this program. *Poor*—No effort is made to follow up former students of this program.	23								3.5 AVE
24. Promotion of this Occupational Program *Excellent*—An active and organized effort is made to inform the public and its representatives (such as news media, legislators, board, business community) of the importance of providing effective and comprehensive occupational education and specific training for this occupation to gain community support. *Poor*—There is no organized public information effort for this program.	24								4.0 AVE
RESOURCES									
25. Provision for Leadership and Coordination *Excellent*—Responsibility, authority, and accountability for this program are clearly identified and assigned. Administrative effectiveness is achieved in planning, managing, and evaluating this program. *Poor*—There are no clearly defined lines of responsibility, authority, and accountability for this program.	25								4.3 AVE

PROG

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

RESOURCES (Continued)

		Response Instructions: Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
26. Qualifications of Administrators and/or Supervisors *Excellent*—All persons responsible for directing and coordinating this program demonstrate a high level of administrative ability. They are knowledgeable in and committed to occupational education. *Poor*—Persons responsible for directing and coordinating this program have little administrative training, education, and experience.	26							3.7 AVE
27. Instructional Staffing *Excellent*—Instructional staffing for this program is sufficient to permit optimum program effectiveness (such as through enabling instructors to meet individual student needs, providing liaison with advisory committees, and assisting with placement and follow-up activities). *Poor*—Staffing is inadequate to meet the needs of this program effectively.	27							2.0 AVE
28. Qualifications of Instructional Staff *Excellent*—Instructors in this program have two or more years in relevant employment experience, have kept current in their field, and have developed and maintained a high level of teaching competence. *Poor*—Few instructors in this program have relevant employment experience or current competence in their field.	28							4.5 AVE
29. Professional Development Opportunities *Excellent*—The college encourages and supports the continuing professional development of faculty through such opportunities as conference attendance, curriculum development, work experience. *Poor*—The college does not encourage or support professional development of faculty.	29							2.8 AVE
30. Use of Instructional Support Staff *Excellent*—Paraprofessionals (such as aides, laboratory assistants) are used when appropriate to provide classroom help to students and to ensure maximum effectiveness of instructors in the program. *Poor*—Little use is made of instructional support staff in this program.	30							2.2 AVE
31. Use of Clerical Support Staff *Excellent*—Office and clerical assistance is available to instructors in this program and used to ensure maximum effectiveness of instructors. *Poor*—Little or no office and clerical assistance is available to instructors; ineffective use is made of clerical support staff.	31							3.2 AVE
32. Adequacy and Availability of Instructional Equipment. *Excellent*—Equipment used on or off campus for this program is current, representative of that used on jobs for which students are being trained, and in sufficient supply to meet the needs of students. *Poor*—Equipment for this program is outmoded and in insufficient quantity to support quality instruction.	32							4.3 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS		Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
RESOURCES (Continued)									
33. Maintenance and Safety of Instructional Equipment *Excellent*—Equipment used for this program is operational, safe, and well maintained. *Poor*—Equipment used for this program is often not operable and is unsafe.	33								4.3 AVE
34. Adequacy of Instructional Facilities *Excellent*—Instructional facilities (excluding equipment) meet the program objectives and student needs, are functional and provide maximum flexibility and safe working conditions. *Poor*—Facilities for this program generally are restrictive, disfunctional, or overcrowded.	34								3.3 AVE
35. Scheduling of Instructional Facilities *Excellent*—Scheduling of facilities and equipment for this program is planned to maximize use and be consistent with quality instruction. *Poor*—Facilities and equipment for this program are significantly under- or over-scheduled.	35								3.5 AVE
36. Adequacy and Availability of Instructional Materials and Supplies *Excellent*—Instructional materials and supplies are readily available and in sufficient quantity to support quality instruction. *Poor*—Materials and supplies in this program are limited in amount, generally outdated, and lack relevance to program and student needs.	36								4.2 AVE
37. Adequacy and Availability of Learning Resources *Excellent*—Learning resources for this program are available and accessible to students, current and relevant to the occupation, and selected to avoid sex bias and stereotyping. *Poor*—Learning resources for this program are outdated, limited in quantity, and lack relevance to the occupation.	37								4.8 AVE
38. Use of Advisory Committees *Excellent*—The advisory committee for this program is active and representative of the occupation. *Poor*—The advisory committee for this program is not representative of the occupation and rarely meets.	38								3.8 AVE
39. Provisions in Current Operating Budget *Excellent*—Adequate funds are allocated in the college operating budget to support achievement of approved program objectives. Allocations are planned to consider instructor budget input. *Poor*—Funds provided are seriously inadequate in relation to approved objectives for this program.	39								3.3 AVE
40. Provisions in Capital Outlay Budget for Equipment *Excellent*—Funds are allocated in a planned effort to provide for needed new equipment and for equipment replacement and repair, consistent with the objectives for this program and based on instructor input. *Poor*—Equipment needs in this program are almost totally unmet in the capital outlay budget.	40								2.8 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Please answer the following: (Use back of page and extra sheets if necessary).

1. **What are the chief occupational education strengths of your program?**

GREAT LABS

GOOD BLEND - THEORY + PRACTICE

2. **What are the major needs for improvement in your program and what action is required to achieve these improvements?**

9th FACULTY MEMBER NEEDED

SEPARATE SOILS + MATERIALS LABS NEEDED

PLEASE IDENTIFY THE POSITION OF THE PERSON COMPLETING THIS FORM AND THE OCCUPATIONAL PROGRAM (such as registered nursing, data processing).

Check One: **Program:** _____

- Division/Department Chair ____
- Faculty ____
- Counselor ____
- Other, please specify: ____ _____

COLLEGE SUMMARY SHEET
CET

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

INSTRUCTIONS TO RESPONDENTS

On the following pages you are asked to give your perceptions of your occupational program (such as registered nursing, automotive technology, secretarial science). The items you are asked to rate are grouped into the major components of the Program Review in Occupational Education (PROE) system, namely:

- Goals and Objectives
- Processes
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Rate each item by checking your best judgment on a five point scale ranging from poor to excellent. Only check one answer per item. A "Don't Know" column has been provided in the event you really don't have sufficient information to rate an item. Space has been provided for you to note comments that may help to clarify your ratings or to indicate modifications of a standard to make it more relevant for your program.

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This form may be completed as a *consensus* evaluation by the principal persons involved with a specific occupational program. Examples of such persons would be instructors, department or division chairpersons, program coordinators, and administrators such as occupational dean. If preferred, respondents may complete individual forms.

To help with tabulation of responses, please provide the information requested below before completing your rating.

PROGRAM TITLE CIVIL ENG. TECH. USOE CODE # ____.____ ____ ____ ____ ____ ____

PERSONS PARTICIPATING IN CONSENSUS EVALUATION OR INDIVIDUAL COMPLETING THIS FORM:

Name _____ Title _____

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Approach Instruction	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES									
1. Participation in Development of College Occupational Education Program Plan *Excellent*—Administrators and/or other supervisory personnel involved in developing and revising the college plan for this occupational program seek and respond to faculty, student and community input. *Poor*—Development of the plan for this program is basically the work of one or two persons in the college.	1								4.6 AVE
2. Program Goals *Excellent*—Written goals for this program state realistic outcomes (such as planned enrollments, completions, placements) and are used as one measure of program effectiveness. *Poor*—No written goals exist for this program.	2								4.4 AVE
3. Course Objectives *Excellent*—Written measurable objectives have been developed for all occupational courses in this program and are used to plan and organize instruction. *Poor*—No written objectives have been developed for courses in this program.	3								4.6 AVE
4. Competency Based Performance Objectives *Excellent*—Competency based performance objectives are on file in writing, consistent with employment standards, and tell students what to expect and help faculty pace instruction. *Poor*—Competency based performance objectives have not been developed for courses in this program.	4								3.7 AVE
5. Use of Competency Based Performance Objectives *Excellent*—Competency based performance objectives are distributed to students and used to assess student progress. *Poor*—Competency based performance objectives are not used with students for progress evaluation nor are students aware that they exist.	5								3.6 AVE
6. Use of Information on Labor Market Needs *Excellent*—Current data on labor market needs and emerging trends in job openings are systematically used in developing and evaluating this program. *Poor*—Labor market data is not used in planning or evaluation.	6								4.7 AVE
7. Use of Information on Job Performance Requirements *Excellent*—Current data on job performance requirements and trends are systematically used in developing and evaluating this program and content of its courses. *Poor*—Job performance requirements information has not been collected for use in planning and evaluating.	7								4.3 AVE

PROF

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS		Keypunch Instructions: 1 Poor	2 Below Expectations	3 Acceptable	4 Good	5 Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES (Continued)								
8. Use of Profession/Industry Standards *Excellent*—Profession/industry standards (such as licensing, certification, accreditation) are consistently used in planning and evaluating this program and content of its courses. *Poor*—Little or no recognition is given to specific profession/industry standards in planning and evaluating this program.	8							4.5 AVE
9. Use of Student Follow-Up Information *Excellent*—Current follow-up data on completers and leavers (students with marketable skills) are consistently and systematically used in evaluating this program. *Poor*—Student follow-up information has not been collected for use in evaluating this program.	9							4.0 AVE
PROCESSES								
10. Adaptation of Instruction *Excellent*—Instruction in all courses required for this program recognizes and responds to individual student interests, learning styles, skills, and abilities through a variety of instructional methods (such as small group or individualized instruction, laboratory or "hands on" experiences, open entry/open exit, credit by examination). *Poor*—Instructional approaches in this program do not consider individual student differences.	10							4.5 AVE
11. Relevance of Supportive Courses *Excellent*—Applicable supportive courses (such as anatomy and physiology, technical communications, technical mathematics) are closely coordinated with this program and are kept relevant to program goals and current to the needs of students. *Poor*—Supportive course content reflects no planned approach to meeting needs of students in this program.	11							4.3 AVE
12. Coordination with Other Community Agencies and Educational Programs. *Excellent*—Effective liaison is maintained with other programs and educational agencies and institutions (such as high schools, other community colleges, four year colleges, area vocational schools, proprietary schools, CETA) to assure a coordinated approach and to avoid duplication in meeting occupational needs of the area or community. *Poor*—College activities reflect a disinterest in coordination with other programs and agencies having impact on this program.	12							4.0 AVE
13. Provision for Work Experience, Cooperative Education or Clinical Experience. *Excellent*—Ample opportunities are provided for related work experience, cooperative education, or clinical experience for students in this program. Student participation is well coordinated with classroom instruction and employer supervision. *Poor*—Few opportunities are provided in this program for related work experience, cooperative education, or clinical experience where such participation is feasible.	13							4.0 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Response Inadequate Information	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
14. Program Availability and Accessibility *Excellent*—Students and potential students desiring enrollment in this program are identified through recruitment activities, treated equally in enrollment selection, and not discouraged by unrealistic prerequisites. The program is readily available and accessible at convenient times and locations. *Poor*—This program is not available or accessible to most students seeking enrollment. Discriminatory selection procedures are practiced.	14								4.7 AVE
15. Provision for the Disadvantaged *Excellent*—Support services are provided for disadvantaged (such as socioeconomic, cultural, linguistic, academic) students enrolled in this program. Services are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services are provided for disadvantaged students enrolled in this program.	15								4.3 AVE
16. Provision for the Handicapped. *Excellent*—Support services are provided for handicapped (physical, mental, emotional, and other health impairing handicaps) students enrolled in this program. Facilities and equipment adaptations are made as needed. Services and facilities modifications are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services or facilities and equipment modifications are available for handicapped students enrolled in this program.	16								4.0 AVE
17. Efforts to Achieve Sex Equity *Excellent*—Emphasis is given to eliminating sex bias and sex stereotyping in this program: staffing, student recruitment, program advisement, and career counseling; access to and acceptance in programs; selection of curricular materials; instruction; job development and placement. *Poor*—Almost no attention is directed toward achieving sex equity in this program.	17								4.7 AVE
18. Provision for Program Advisement *Excellent*—Instructors or other qualified personnel advise students (day, evening, weekend) on program and course selection. Registration procedures facilitate course selection and sequencing. *Poor*—Instructors make no provision for advising students on course and program selection.	18								4.7 AVE
19. Provision for Career Planning and Guidance *Excellent*—Day, evening, and weekend students in this program have ready access to career planning and guidance services. *Poor*—Little or no provision is made for career planning and guidance services for students enrolled in this program.	19								4.0 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Requires Instruction	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
20. Adequacy of Career Planning and Guidance *Excellent*—Instructors or other qualified personnel providing career planning and guidance services have current and relevant occupational knowledge and use a variety of resources (such as printed materials, audiovisuals, job observation) to meet individual student career objectives. *Poor*—Career planning and guidance services are ineffective and staffed with personnel who have little occupational knowledge.	20								4.4 AVE
21. Provision for Employability Information. *Excellent*—This program includes information which is valuable to students as employees (on such topics as employment opportunities and future potential, starting salary, benefits, responsibilities and rights). *Poor*—Almost no emphasis is placed on providing information important to students as employees.	21								4.6 AVE
22. Placement Effectiveness for Students in this Program *Excellent*—The college has an effectively functioning system for locating jobs and coordinating placement for students in this program. *Poor*—The college has no system or an ineffective system for locating jobs and coordinating placement for occupational students enrolled in this program.	22								4.6 AVE
23. Student Follow-up System *Excellent*—Success and failure of program leavers and completers are assessed through periodic follow-up studies. Information learned is made available to instructors, students, advisory committee members and others concerned (such as counselors) and is used to modify this program. *Poor*—No effort is made to follow up former students of this program.	23								3.6 AVE
24. Promotion of this Occupational Program *Excellent*—An active and organized effort is made to inform the public and its representatives (such as news media, legislators, board, business community) of the importance of providing effective and comprehensive occupational education and specific training for this occupation to gain community support. *Poor*—There is no organized public information effort for this program.	24								4.2 AVE
RESOURCES									
25. Provision for Leadership and Coordination *Excellent*—Responsibility, authority, and accountability for this program are clearly identified and assigned. Administrative effectiveness is achieved in planning, managing, and evaluating this program. *Poor*—There are no clearly defined lines of responsibility, authority, and accountability for this program.	25								4.4 AVE

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS		Not Enough Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
RESOURCES (Continued)									
26. Qualifications of Administrators and/or Supervisors *Excellent*—All persons responsible for directing and coordinating this program demonstrate a high level of administrative ability. They are knowledgeable in and committed to occupational education. *Poor*—Persons responsible for directing and coordinating this program have little administrative training, education, and experience.	26								3.9 AVE
27. Instructional Staffing *Excellent*—Instructional staffing for this program is sufficient to permit optimum program effectiveness (such as through enabling instructors to meet individual student needs, providing liaison with advisory committees, and assisting with placement and follow-up activities). *Poor*—Staffing is inadequate to meet the needs of this program effectively.	27								2.0 AVE
28. Qualifications of Instructional Staff *Excellent*—Instructors in this program have two or more years in relevant employment experience, have kept current in their field, and have developed and maintained a high level of teaching competence. *Poor*—Few instructors in this program have relevant employment experience or current competence in their field.	28								4.9 AVE
29. Professional Development Opportunities *Excellent*—The college encourages and supports the continuing professional development of faculty through such opportunities as conference attendance, curriculum development, work experience. *Poor*—The college does not encourage or support professional development of faculty.	29								2.8 AVE
30. Use of Instructional Support Staff *Excellent*—Paraprofessionals (such as aides, laboratory assistants) are used when appropriate to provide classroom help to students and to ensure maximum effectiveness of instructors in the program. *Poor*—Little use is made of instructional support staff in this program.	30								2.2 AVE
31. Use of Clerical Support Staff *Excellent*—Office and clerical assistance is available to instructors in this program and used to ensure maximum effectiveness of instructors. *Poor*—Little or no office and clerical assistance is available to instructors; ineffective use is made of clerical support staff.	31								3.4 AVE
32. Adequacy and Availability of Instructional Equipment. *Excellent*—Equipment used on or off campus for this program is current, representative of that used on jobs for which students are being trained, and in sufficient supply to meet the needs of students. *Poor*—Equipment for this program is outmoded and in insufficient quantity to support quality instruction.	32								4.4 AVE

PROF

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS		Request Instruction	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
RESOURCES (Continued)									
33. Maintenance and Safety of Instructional Equipment *Excellent*—Equipment used for this program is operational, safe, and well maintained. *Poor*—Equipment used for this program is often not operable and is unsafe.	33								4.4 AVE
34. Adequacy of Instructional Facilities *Excellent*—Instructional facilities (excluding equipment) meet the program objectives and student needs, are functional and provide maximum flexibility and safe working conditions. *Poor*—Facilities for this program generally are restrictive, disfunctional, or overcrowded.	34								3.4 AVE
35. Scheduling of Instructional Facilities *Excellent*—Scheduling of facilities and equipment for this program is planned to maximize use and be consistent with quality instruction. *Poor*—Facilities and equipment for this program are significantly under- or over-scheduled.	35								3.6 AVE
36. Adequacy and Availability of Instructional Materials and Supplies *Excellent*—Instructional materials and supplies are readily available and in sufficient quantity to support quality instruction. *Poor*—Materials and supplies in this program are limited in amount, generally outdated, and lack relevance to program and student needs.	36								4.3 AVE
37. Adequacy and Availability of Learning Resources *Excellent*—Learning resources for this program are available and accessible to students, current and relevant to the occupation, and selected to avoid sex bias and stereotyping. *Poor*—Learning resources for this program are outdated, limited in quantity, and lack relevance to the occupation.	37								4.6 AVE
38. Use of Advisory Committees *Excellent*—The advisory committee for this program is active and representative of the occupation. *Poor*—The advisory committee for this program is not representative of the occupation and rarely meets.	38								4.3 AVE
39. Provisions in Current Operating Budget *Excellent*—Adequate funds are allocated in the college operating budget to support achievement of approved program objectives. Allocations are planned to consider instructor budget input. *Poor*—Funds provided are seriously inadequate in relation to approved objectives for this program.	39								3.3 AVE
40. Provisions in Capital Outlay Budget for Equipment *Excellent*—Funds are allocated in a planned effort to provide for needed new equipment and for equipment replacement and repair, consistent with the objectives for this program and based on instructor input. *Poor*—Equipment needs in this program are almost totally unmet in the capital outlay budget.	40								2.8 AVE

PROE

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Please answer the following: (Use back of page and extra sheets if necessary).

1. What are the chief occupational education strengths of your program?

GREAT LABS
HANDS-ON APPLICATIONS
ADVANCED MATERIALS - CODA

2. What are the major needs for improvement in your program and what action is required to achieve these improvements?

SEPARATE SOILS + MATERIALS LABS NEEDED
NEED 9th FACULTY MEMBER

PLEASE IDENTIFY THE POSITION OF THE PERSON COMPLETING THIS FORM AND THE OCCUPATIONAL PROGRAM (such as registered nursing, data processing).

Check One: Program: A.A.S. C.E.T.

- Division/Department Chair ____
- Faculty ____
- Counselor ____
- Other, please specify: ____ _____

COLLEGE SUMMARY SHEET
CM (B.S. PROGRAM)

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

INSTRUCTIONS TO RESPONDENTS

On the following pages you are asked to give your perceptions of your occupational program (such as registered nursing, automotive technology, secretarial science). The items you are asked to rate are grouped into the major components of the Program Review in Occupational Education (PROE) system, namely:

- Goals and Objectives
- Processes
- Resources

Rate each item by checking your best judgment on a five point scale ranging from poor to excellent. Only check one answer per item. A "Don't Know" column has been provided in the event you really don't have sufficient information to rate an item. Space has been provided for you to note comments that may help to clarify your ratings or to indicate modifications of a standard to make it more relevant for your program.

Criteria for excellent and poor ratings are provided for each item. *Excellent* represents a nearly ideal or exemplary situation; *poor*, one of serious inadequacy. As a guide, ratings may be made with the following in mind:

EXCELLENT means ideal, top 5 to 10%
GOOD is a strong rating, top 1/3rd
ACCEPTABLE is average, the middle 1/3rd
BELOW EXPECTATIONS is only fair, bottom 1/3rd
POOR is seriously inadequate, bottom 5 to 10%

This form may be completed as a *consensus* evaluation by the principal persons involved with a specific occupational program. Examples of such persons would be instructors, department or division chairpersons, program coordinators, and administrators such as occupational dean. If preferred, respondents may complete individual forms.

To help with tabulation of responses, please provide the information requested below before completing your rating.

PROGRAM TITLE CONSTRUCTION MGMT. USOE CODE # ____.____ ____ ____ ____ ____ ____

PERSONS PARTICIPATING IN CONSENSUS EVALUATION OR INDIVIDUAL COMPLETING THIS FORM:

Name	Title

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES									
1. Participation in Development of College Occupational Education Program Plan *Excellent*—Administrators and/or other supervisory personnel involved in developing and revising the college plan for this occupational program seek and respond to faculty, student and community input. *Poor*—Development of the plan for this program is basically the work of one or two persons in the college.	1								4.6 AVE
2. Program Goals *Excellent*—Written goals for this program state realistic outcomes (such as planned enrollments, completions, placements) and are used as one measure of program effectiveness. *Poor*—No written goals exist for this program.	2								4.6 AVE
3. Course Objectives *Excellent*—Written measurable objectives have been developed for all occupational courses in this program and are used to plan and organize instruction. *Poor*—No written objectives have been developed for courses in this program.	3								4.6 AVE
4. Competency Based Performance Objectives *Excellent*—Competency based performance objectives are on file in writing, consistent with employment standards, and tell students what to expect and help faculty pace instruction. *Poor*—Competency based performance objectives have not been developed for courses in this program.	4								3.7 AVE
5. Use of Competency Based Performance Objectives *Excellent*—Competency based performance objectives are distributed to students and used to assess student progress. *Poor*—Competency based performance objectives are not used with students for progress evaluation nor are students aware that they exist.	5								3.6 AVE
6. Use of Information on Labor Market Needs *Excellent*—Current data on labor market needs and emerging trends in job openings are systematically used in developing and evaluating this program. *Poor*—Labor market data is not used in planning or evaluation.	6								4.7 AVE
7. Use of Information on Job Performance Requirements *Excellent*—Current data on job performance requirements and trends are systematically used in developing and evaluating this program and content of its courses. *Poor*—Job performance requirements information has not been collected for use in planning and evaluating.	7								4.3 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Keypunch Instructions	1 Poor	2 Below Expectations	3 Acceptable	4 Good	5 Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES (Continued)									
8. Use of Profession/Industry Standards *Excellent*—Profession/industry standards (such as licensing, certification, accreditation) are consistently used in planning and evaluating this program and content of its courses. *Poor*—Little or no recognition is given to specific profession/industry standards in planning and evaluating this program.	8					-			4.5 AVE
9. Use of Student Follow-Up Information *Excellent*—Current follow-up data on completers and leavers (students with marketable skills) are consistently and systematically used in evaluating this program. *Poor*—Student follow-up information has not been collected for use in evaluating this program.	9								4.0 AVE
PROCESSES									
10. Adaptation of Instruction *Excellent*—Instruction in all courses required for this program recognizes and responds to individual student interests, learning styles, skills, and abilities through a variety of instructional methods (such as small group or individualized instruction, laboratory or "hands on" experiences, open entry/open exit, credit by examination). *Poor*—Instructional approaches in this program do not consider individual student differences.	10								4.2 AVE
11. Relevance of Supportive Courses *Excellent*—Applicable supportive courses (such as anatomy and physiology, technical communications, technical mathematics) are closely coordinated with this program and are kept relevant to program goals and current to the needs of students. *Poor*—Supportive course content reflects no planned approach to meeting needs of students in this program.	11								4.3 AVE
12. Coordination with Other Community Agencies and Educational Programs. *Excellent*—Effective liaison is maintained with other programs and educational agencies and institutions (such as high schools, other community colleges, four year colleges, area vocational schools, proprietary schools, CETA) to assure a coordinated approach and to avoid duplication in meeting occupational needs of the area or community. *Poor*—College activities reflect a disinterest in coordination with other programs and agencies having impact on this program.	12								4.0 AVE
13. Provision for Work Experience, Cooperative Education or Clinical Experience. *Excellent*—Ample opportunities are provided for related work experience, cooperative education, or clinical experience for students in this program. Student participation is well coordinated with classroom instruction and employer supervision. *Poor*—Few opportunities are provided in this program for related work experience, cooperative education, or clinical experience where such participation is feasible.	13								3.8 AVE

PROE

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Approach Instruction	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
14. Program Availability and Accessibility *Excellent*—Students and potential students desiring enrollment in this program are identified through recruitment activities, treated equally in enrollment selection, and not discouraged by unrealistic prerequisites. The program is readily available and accessible at convenient times and locations. *Poor*—This program is not available or accessible to most students seeking enrollment. Discriminatory selection procedures are practiced.	14								4.7 AVE
15. Provision for the Disadvantaged *Excellent*—Support services are provided for disadvantaged (such as socioeconomic, cultural, linguistic, academic) students enrolled in this program. Services are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services are provided for disadvantaged students enrolled in this program.	15								4.3 AVE
16. Provision for the Handicapped. *Excellent*—Support services are provided for handicapped (physical, mental, emotional, and other health impairing handicaps) students enrolled in this program. Facilities and equipment adaptations are made as needed. Services and facilities modifications are coordinated with occupational instruction and results are assessed continuously. *Poor*—No support services or facilities and equipment modifications are available for handicapped students enrolled in this program.	16								4.0 AVE
17. Efforts to Achieve Sex Equity *Excellent*—Emphasis is given to eliminating sex bias and sex stereotyping in this program: staffing, student recruitment, program advisement, and career counseling; access to and acceptance in programs; selection of curricular materials; instruction; job development and placement. *Poor*—Almost no attention is directed toward achieving sex equity in this program.	17								4.7 AVE
18. Provision for Program Advisement *Excellent*—Instructors or other qualified personnel advise students (day, evening, weekend) on program and course selection. Registration procedures facilitate course selection and sequencing. *Poor*—Instructors make no provision for advising students on course and program selection.	18								4.7 AVE
19. Provision for Career Planning and Guidance *Excellent*—Day, evening, and weekend students in this program have ready access to career planning and guidance services. *Poor*—Little or no provision is made for career planning and guidance services for students enrolled in this program.	19								4.3 AVE

PROF

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Keypunch Instructions: 1 Poor	2 Below Expectations	3 Acceptable	4 Good	5 Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)								
20. Adequacy of Career Planning and Guidance *Excellent*—Instructors or other qualified personnel providing career planning and guidance services have current and relevant occupational knowledge and use a variety of resources (such as printed materials, audiovisuals, job observation) to meet individual student career objectives. *Poor*—Career planning and guidance services are ineffective and staffed with personnel who have little occupational knowledge.	20							4.7 AVE
21. Provision for Employability Information. *Excellent*—This program includes information which is valuable to students as employees (on such topics as employment opportunities and future potential, starting salary, benefits, responsibilities and rights). *Poor*—Almost no emphasis is placed on providing information important to students as employees.	21							4.8 AVE
22. Placement Effectiveness for Students in this Program *Excellent*—The college has an effectively functioning system for locating jobs and coordinating placement for students in this program. *Poor*—The college has no system or an ineffective system for locating jobs and coordinating placement for occupational students enrolled in this program.	22							5.0 AVE
23. Student Follow-up System *Excellent*—Success and failure of program leavers and completers are assessed through periodic follow-up studies. Information learned is made available to instructors, students, advisory committee members and others concerned (such as counselors) and is used to modify this program. *Poor*—No effort is made to follow up former students of this program.	23							3.7 AVE
24. Promotion of this Occupational Program *Excellent*—An active and organized effort is made to inform the public and its representatives (such as news media, legislators, board, business community) of the importance of providing effective and comprehensive occupational education and specific training for this occupation to gain community support. *Poor*—There is no organized public information effort for this program.	24							4.2 AVE
RESOURCES								
25. Provision for Leadership and Coordination *Excellent*—Responsibility, authority, and accountability for this program are clearly identified and assigned. Administrative effectiveness is achieved in planning, managing, and evaluating this program. *Poor*—There are no clearly defined lines of responsibility, authority, and accountability for this program.	25							4.5 AVE

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

RESOURCES (Continued)

		Response Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
26. Qualifications of Administrators and/or Supervisors *Excellent*—All persons responsible for directing and coordinating this program demonstrate a high level of administrative ability. They are knowledgeable in and committed to occupational education. *Poor*—Persons responsible for directing and coordinating this program have little administrative training, education, and experience.	26								3.9 AVE
27. Instructional Staffing *Excellent*—Instructional staffing for this program is sufficient to permit optimum program effectiveness (such as through enabling instructors to meet individual student needs, providing liaison with advisory committees, and assisting with placement and follow-up activities). *Poor*—Staffing is inadequate to meet the needs of this program effectively.	27								2.0 AVE
28. Qualifications of Instructional Staff *Excellent*—Instructors in this program have two or more years in relevant employment experience, have kept current in their field, and have developed and maintained a high level of teaching competence. *Poor*—Few instructors in this program have relevant employment experience or current competence in their field.	28								4.6 AVE
29. Professional Development Opportunities *Excellent*—The college encourages and supports the continuing professional development of faculty through such opportunities as conference attendance, curriculum development, work experience. *Poor*—The college does not encourage or support professional development of faculty.	29								3.0 AVE
30. Use of Instructional Support Staff *Excellent*—Paraprofessionals (such as aides, laboratory assistants) are used when appropriate to provide classroom help to students and to ensure maximum effectiveness of instructors in the program. *Poor*—Little use is made of instructional support staff in this program.	30								2.2 AVE
31. Use of Clerical Support Staff *Excellent*—Office and clerical assistance is available to instructors in this program and used to ensure maximum effectiveness of instructors. *Poor*—Little or no office and clerical assistance is available to instructors; ineffective use is made of clerical support staff.	31								3.4 AVE
32. Adequacy and Availability of Instructional Equipment. *Excellent*—Equipment used on or off campus for this program is current, representative of that used on jobs for which students are being trained, and in sufficient supply to meet the needs of students. *Poor*—Equipment for this program is outmoded and in insufficient quantity to support quality instruction.	32								4.3 AVE

PROF

1

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Kapiolani Instructional: 1 Poor	2 Below Expectations	3 Acceptable	4 Good	5 Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
RESOURCES (Continued)								
33. Maintenance and Safety of Instructional Equipment *Excellent*—Equipment used for this program is operational, safe, and well maintained. *Poor*—Equipment used for this program is often not operable and is unsafe.	33							4.5 AVE
34. Adequacy of Instructional Facilities *Excellent*—Instructional facilities (excluding equipment) meet the program objectives and student needs, are functional and provide maximum flexibility and safe working conditions. *Poor*—Facilities for this program generally are restrictive, disfunctional, or overcrowded.	34							3.3 AVE
35. Scheduling of Instructional Facilities *Excellent*—Scheduling of facilities and equipment for this program is planned to maximize use and be consistent with quality instruction. *Poor*—Facilities and equipment for this program are significantly under- or over-scheduled.	35							4.0 AVE
36. Adequacy and Availability of Instructional Materials and Supplies *Excellent*—Instructional materials and supplies are readily available and in sufficient quantity to support quality instruction. *Poor*—Materials and supplies in this program are limited in amount, generally outdated, and lack relevance to program and student needs.	36							4.3 AVE
37. Adequacy and Availability of Learning Resources *Excellent*—Learning resources for this program are available and accessible to students, current and relevant to the occupation, and selected to avoid sex bias and stereotyping. *Poor*—Learning resources for this program are outdated, limited in quantity, and lack relevance to the occupation.	37							4.8 AVE
38. Use of Advisory Committees *Excellent*—The advisory committee for this program is active and representative of the occupation. *Poor*—The advisory committee for this program is not representative of the occupation and rarely meets.	38							4.1 AVE
39. Provisions in Current Operating Budget *Excellent*—Adequate funds are allocated in the college operating budget to support achievement of approved program objectives. Allocations are planned to consider instructor budget input. *Poor*—Funds provided are seriously inadequate in relation to approved objectives for this program.	39							3.3 AVE
40. Provisions in Capital Outlay Budget for Equipment *Excellent*—Funds are allocated in a planned effort to provide for needed new equipment and for equipment replacement and repair, consistent with the objectives for this program and based on instructor input. *Poor*—Equipment needs in this program are almost totally unmet in the capital outlay budget.	40							2.8 AVE

PROE

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Please answer the following: (Use back of page and extra sheets if necessary).

1. **What are the chief occupational education strengths of your program?**

HANDS - ON

PRACTICAL

STUDENTS PREPARED TO BE TEAM MEMBERS

2. **What are the major needs for improvement in your program and what action is required to achieve these improvements?**

NEED SEPARATE SOILS & MATERIALS LABS

NEED 9th FACULTY MEMBER

PLEASE IDENTIFY THE POSITION OF THE PERSON COMPLETING THIS FORM AND THE OCCUPATIONAL PROGRAM (such as registered nursing, data processing).

Check One: **Program:** _____

- **Division/Department Chair** ____
- **Faculty** ____
- **Counselor** ____
- **Other, please specify:** ____ _____

Faculty Survey Written Comments

Note: The faculty surveyed each of the three programs individually and some made the same comments on all three surveys.

BCT AAS:

Strengths:

Great lab courses - Framing, Mech-Elect.

Good blend of technology, theory and practice.

Needs Improvement:

We need a separate laboratory facility with adjacent lecture area for our soils and materials courses.

Need ninth faculty. Separate soils/materials labs.

Courses need to be monitored so full content of outlines presented.

Other:

Computer tech needed. Soils lab needed.

Placement effectiveness good. Efforts are program efforts, not the college or university.

CET AAS:

Strengths:

Great civil lab courses.

Engineering, materials.

The advanced materials course.

I believe the greatest strength is the way the program integrates technical/book knowledge with practical information the students will use hands-on in their job. (It's not all theory.)

Needs Improvement:

We need a separate laboratory facility with an adjacent lecture area for our soils and materials courses.

Need ninth faculty. Need separate soils/materials labs.

Need a new soils laboratory.

Improvement is in process because of the ICET programs. Attempts are being made to add ACI certification to the aggregate and the bituminous certifications. Resources are available now because of the QC/QA program.

None that I know of.

Other:

I order or arrange the materials. So far, I have been successful.

More computer staff needed. Soils lab needed.

Use of profession/industry standards excellent (based on both faculty interest and interaction with ICET programs.

Provision for work experience good. What is available is very good, but is limited in number.

Placement effectiveness good. Efforts are program efforts, not the college or university.

Relevance of supportive courses good. Problems with students' math ability, especially for technical matters.

Coordination with other community agencies and educational programs, provision for work experience, cooperative education or clinical experience excellent. Bob Eastley is very involved with recruiting at schools, but as to the details of such coordination, I don't know exactly.

Efforts to achieve sex equity good. I would like to see an increase in females in the technical programs, but they have to be reached early in high school.

Provision for program advisement excellent. Other instructors (since I do not advise students) are very involved with advising students, and students like most of the faculty very much.

Placement effectiveness for students in this program excellent. Regular postings are distributed to faculty to pass on to students.

Qualifications of administrators and/or supervisors excellent. This is my opinion, although I have heard some faculty having difficulties, to me all is fine.

Professional development opportunities. Don't know due to not being permanent, but I know staff do go to conferences.

Use of instructional support staff below expectations. Don't know of any support staff, and there are few if any tutors for the students on technical material.

Use of clerical staff excellent. All are really helpful and friendly.

Adequacy of instructional facilities good. Some rooms need better ventilation (in Swan).

Scheduling of instructional facilities good. Students have a need for more time open in the Swan 101 computer lab.

Competency based performance objectives and use acceptable. Haven't seen any but perhaps they do exist. If so my score should be changed. Rating based on verbal discussion with other faculty.

CM BS:

Strengths:

ACCE accreditation.

The "hands-on" instructional approach. These students have acquired the skills necessary to be a productive team member the first day they are hired.

Great training for contractors. Hands-on, practical.

I believe the greatest strength is the way the program combines technical/book knowledge with practical hands-on knowledge.

Needs Improvement:

We need a separate laboratory facility with adjacent lecture area for soils and materials laboratory. This facility is currently also trying to accommodate the surveying engineering and some architectural tech students.

Need separate soils and materials labs. Need ninth faculty.

None that I know of.

Other:

Computer techs needed. Soils lab needed.

Competency based performance objectives and use acceptable. Haven't seen any, but perhaps they do exist. If so, my score should be changed. Rating based on verbal discussion with other faculty.

Relevance of supportive courses good. Problems with students' math ability, especially for technical matters.

Placement effectiveness excellent. Program efforts only, not college or university.

Construction Programs

APRC 1998 - 1999

Section 3 of 3

Coordination with other community agencies and educational programs, provision for work experience, cooperative education or clinical experience excellent. Bob Eastley is very involved with recruiting at schools, but as to the details of such coordination, I don't know exactly.

Efforts to achieve sex equity good. I would like to see an increase in females in the technical programs, but they have to be reached early in high school.

Provision for program advisement excellent. Other instructors (since I do not advise students) are very involved with advising students, and students like most of the faculty very much.

Placement effectiveness for students in this program excellent. Regular postings are distributed to faculty to pass on to students.

Qualifications of administrators and/or supervisors excellent. This is my opinion, although I have heard some faculty having difficulties, to me all is fine.

Professional development opportunities. Don't know due to not being permanent, but I know staff do go to conferences.

Use of instructional support staff below expectations. Don't know of any support staff, and there are few if any tutors for the students on technical material.

Use of clerical staff excellent. All are really helpful and friendly.

Adequacy of instructional facilities good. Some rooms need better ventilation (in Swan).

Scheduling of instructional facilities good. Students have a need for more time open in the Swan 101 computer lab.

Summary Sheet G

ADVISORY COMMITTEE SURVEY
FOR THE FERRIS STATE UNIVERSITY
BUILDING CONSTRUCTION TECHNOLOGY (BCT) PROGRAM

Please circle the appropriate response, with a score of "5" being excellent, and "1" being poor. If a question is not applicable, or you don't know the answer, please respond "N/A".

		EXCELLENT	GOOD	AVERAGE	BELOW AVERAGE	POOR	N/A	RESPONSE AVERAGE
1.	The BCT program provides the skills and training needed by the industry.	5	4	3	2	1	N/A	4.5
2.	There is a high demand for students from this program.	5	4	3	2	1	N/A	4.57
3.	Your company would hire a student from this program.	5	4	3	2	1	N/A	4.5
4.	The program provides an adequate number of graduates.	5	4	3	2	1	N/A	3.75
5.	The program has adequate computer facilities.	5	4	3	2	1	N/A	4.0
6.	The program has adequate laboratory facilities.	5	4	3	2	1	N/A	3.86
7.	The program has an adequate number of faculty.	5	4	3	2	1	N/A	3.86
8.	The program's curriculum meets the needs of the industry.	5	4	3	2	1	N/A	4.25
9.	The program's faculty have adequate academic credentials and experience.	5	4	3	2	1	N/A	4.5
10.	The program's faculty have adequate institutional support for professional development and continuing education.	5	4	3	2	1	N/A	4.0
11.	The graduates of the program are properly prepared to go to work.	5	4	3	2	1	N/A	4.13
12.	The graduates of the program are competitive with graduates of similar programs from other universities.	5	4	3	2	1	N/A	4.5
13.	The program receives adequate financial support from the university.	5	4	3	2	1	N/A	3.8
14.	The American Council for Construction Education (ACCE) accreditation is vitally important to the success of this program.	5	4	3	2	1	N/A	4.5

SUMMARY SHEET

ADVISORY COMMITTEE SURVEY
FOR THE FERRIS STATE UNIVERSITY
CIVIL ENGINEERING TECHNOLOGY (CET) PROGRAM

Please circle the appropriate response, with a score of "5" being excellent, and "1" being poor. If a question is not applicable, or you don't know the answer, please respond "N/A".

		EXCELLENT	GOOD	AVERAGE	BELOW AVERAGE	POOR	N/A	RESPONSE AVERAGE
1.	The CET program provides the skills and training needed by the industry.	5	4	3	2	1	N/A	4.33
2.	There is a high demand for students from this program.	5	4	3	2	1	N/A	4.5
3.	Your company would hire a student from this program.	5	4	3	2	1	N/A	4.17
4.	The program provides an adequate number of graduates.	5	4	3	2	1	N/A	3.67
5.	The program has adequate computer facilities.	5	4	3	2	1	N/A	3.8
6.	The program has adequate laboratory facilities.	5	4	3	2	1	N/A	3.5
7.	The program has an adequate number of faculty.	5	4	3	2	1	N/A	3.67
8.	The program's curriculum meets the needs of the industry.	5	4	3	2	1	N/A	4.17
9.	The program's faculty have adequate academic credentials and experience.	5	4	3	2	1	N/A	4.6
10.	The program's faculty have adequate institutional support for professional development and continuing education.	5	4	3	2	1	N/A	4.2
11.	The graduates of the program are properly prepared to go to work.	5	4	3	2	1	N/A	4.14
12.	The graduates of the program are competitive with graduates of similar programs from other universities.	5	4	3	2	1	N/A	4.29
13.	The program receives adequate financial support from the university.	5	4	3	2	1	N/A	3.67
14.	The American Council for Construction Education (ACCE) accreditation is vitally important to the success of this program.	5	4	3	2	1	N/A	4.83

Summary Sheet

ADVISORY COMMITTEE SURVEY FOR THE FERRIS STATE UNIVERSITY CONSTRUCTION MANAGEMENT (CM) PROGRAM

Please circle the appropriate response, with a score of "5" being excellent, and "1" being poor. If a question is not applicable, or you don't know the answer, please respond "N/A".

		EXCELLENT	GOOD	AVERAGE	BELOW AVERAGE	POOR	N/A	RESPONSE AVERAGE
1.	The CM program provides the skills and training needed by the industry.	5	4	3	2	1	N/A	4.71
2.	There is a high demand for students from this program.	5	4	3	2	1	N/A	5.0
3.	Your company would hire a student from this program.	5	4	3	2	1	N/A	5.0
4.	The program provides an adequate number of graduates.	5	4	3	2	1	N/A	3.71
5.	The program has adequate computer facilities.	5	4	3	2	1	N/A	3.57
6.	The program has adequate laboratory facilities.	5	4	3	2	1	N/A	3.57
7.	The program has an adequate number of faculty.	5	4	3	2	1	N/A	3.71
8.	The program's curriculum meets the needs of the industry.	5	4	3	2	1	N/A	4.71
9.	The program's faculty have adequate academic credentials and experience.	5	4	3	2	1	N/A	4.5
10.	The program's faculty have adequate institutional support for professional development and continuing education.	5	4	3	2	1	N/A	4.0
11.	The graduates of the program are properly prepared to go to work.	5	4	3	2	1	N/A	4.43
12.	The graduates of the program are competitive with graduates of similar programs from other universities.	5	4	3	2	1	N/A	4.86
13.	The program receives adequate financial support from the university.	5	4	3	2	1	N/A	3.75
14.	The American Council for Construction Education (ACCE) accreditation is vitally important to the success of this program.	5	4	3	2	1	N/A	4.86

FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

BUILDING CONSTRUCTION TECHNOLOGY
ASSOCIATE OF APPLIED SCIENCE
FALL SEMESTER
Curriculum Guide Sheet

Total semester hours required for graduation: 63

NOTE: Meeting the requirements for graduation indicated on this sheet is the responsibility of the student. Compliance with this agreement will assure the student completion of the program in the time frame indicated. Your advisor is available to assist you.

FIRST YEAR - FALL SEMESTER	**CREDITS/GRADES**
CONM 111 Construction Practices (MATH 116 concurrent)	3
CONM 113 Computer Applications for Construction (MATH 116 concurrent)	3
CONM 121 Materials Properties and Testing (MATH 116 concurrent) **OR** Cultural Enrichment Elective	3
ENGL 150 English 1 (Placement)	3
MATH 116 Intermediate Algebra and Numerical Trigonometry (Placement)	4
FIRST YEAR - WINTER SEMESTER	
CONM 112 Plans and Specifications (CONM 111)	3
Cultural Enrichment Elective **OR** CONM 121 Materials Properties and Testing (MATH 116 concurrent)	3
CONM 122 Construction Surveying and Layout (MATH 116)	3
MATH 126 Algebra and Analytic Trigonometry (MATH 116)	4
PHYS 211 Introductory Physics 1 (MATH 116)	4
SECOND YEAR - FALL SEMESTER	
CONM 211 Construction Quantity Estimating (CONM 112,113,MATH 116)	3
CONM 212 Soils and Foundations (CONM 121, MATH 116) **OR** CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211)	3
BCTM 213 Wood and Steel Framing and Finishes (Sophomore Standing) **OR** BCTM 225 Field Engineering (CONM 113,122)	3
BCTM 223 Mechanical and Electrical Plans and Specifications (CONM 112) **OR** HVAC 337 Mechanical/Electrical Systems for Buildings	3
ENGL 250 English 2 (ENGL 150)	3
SECOND YEAR - WINTER SEMESTER	
CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211) **OR** CONM 212 Soils and Foundations (CONM 121, MATH 116)	3
CONM 222 Construction Administration (CONM 211)	3
BCTM 225 Field Engineering (CONM 113, 122) **OR** BCTM 213 Wood and Steel Framing and Finishes (Sophomore Standing)	3
HVAC 337 Mechanical/Electrical Systems for Buildings **OR** BCTM 223 Mechanical and Electrical Plans and Specifications (CONM 112)	3
Social Awareness Elective (ECON 221 - Prin of Economics 1 required for students laddering into the BS Construction Management)	3

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FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CURRICULUM REQUIREMENTS
BUILDING CONSTRUCTION TECHNOLOGY
ASSOCIATE DEGREE IN APPLIED SCIENCE
FALL SEMESTER

TECHNICAL			CREDIT HOURS
BCTM	213	Wood & Steel Framing/Finishes	3
BCTM	223	Mechanical & Electrical Plans/Specs	3
BCTM	225	Field Engineering	3
CONM	111	Construction Practices	3
CONM	112	Plans & Specifications	3
CONM	113	Comp. Appl. for Construction	3
CONM	121	Materials Properties & Testing	3
CONM	122	Construction Surveying & Layout	3
CONM	211	Construction Quantity Estimating	3
CONM	212	Soila & Foundations	3
CONM	221	Statics & Strength of Materials	3
CONM	222	Construction Administration	3
HVAC	337	Mechanical/Electrical Sys for Builders	3

GENERAL EDUCATION			CREDIT HOURS
Communication Competence			
ENGL	150	English 1	3
ENGL	250	English 2	3
Scientific Understanding			
PHYS	211	Introductory Physics 1	4
Quantitative Skills			
MATH	116	Interm. Algebra & Numerical Trig.	4
MATH	126	Algebra & Analytic Trigonometry	4
Cultural Enrichment			
Elective			3
Social Awareness			
Elective			3
(ECON 221 required for BS CONM)			

A.A.S. Degree Minimum General Educational Requirements in Semester Hours:

Cultural Enrichment Credits - 3
Communication Credits - 6
Social Awareness Credits - 3
Scientific Understanding Credits - 3-4

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FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CIVIL ENGINEERING TECHNOLOGY
ASSOCIATE OF APPLIED SCIENCE
FALL SEMESTER
Curriculum Guide Sheet

Total semester hours required for graduation: 63

NOTE: Meeting the requirements for graduation indicated on this sheet is the responsibility of the student. Compliance with this agreement will assure the student completion of the program in the time frame indicated. Your advisor is available to assist you.

FIRST YEAR - FALL SEMESTER	**CREDITS/GRADES**
CONM 111 Construction Practices (MATH 116 concurrent)	3 ———
CONM 113 Computer Applications for Construction (MATH 116 concurrent)	3 ———
CONM 121 Materials Properties and Testing (MATH 116 concurrent) **OR** Cultural Enrichment Elective	3 ———
ENGL 150 English 1 (Placement)	3 ———
MATH 116 Intermediate Algebra and Numerical Trigonometry (Placement)	4 ———
FIRST YEAR - WINTER SEMESTER	
CONM 112 Plans and Specifications (CONM 111)	3 ———
Cultural Enrichment Elective **OR** CONM 121 Materials Properties and Testing (MATH 116 concurrent)	3 ———
CONM 122 Construction Surveying and Layout (MATH 116)	3 ———
MATH 126 Algebra and Analytic Trigonometry (MATH 116)	4 ———
PHYS 211 Introductory Physics 1 (MATH 116)	4 ———
SECOND YEAR - FALL SEMESTER	
CONM 211 Construction Quantity Estimating (CONM 112,113, MATH 116)	3 ———
CONM 212 Soils and Foundations (CONM 121, MATH 116) **OR** CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211)	3 ———
CETM 215 Pavement Design and Construction	3 ———
ENGL 250 English 2 (ENGL 150)	3 ———
Social Awareness Elective (ECON 221 - Prin. of Economics 1 required for students laddering into the BS Construction Management)	3 ———
SECOND YEAR - WINTER SEMESTER	
CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211) **OR** CONM 212 Soils and Foundations (CONM 121, MATH 116)	3 ———
CONM 222 Construction Administration (CONM 211)	3 ———
CETM 214 Advanced Materials Properties and Testing (CONM 121, MATH 116)	3 ———
CETM 226 Highway Technology (CONM 113, 122)	3 ———
CETM 227 Hydraulics and Hydrology (MATH 126, PHYS 211)	3 ———

FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CURRICULUM REQUIREMENTS
CIVIL ENGINEERING TECHNOLOGY
ASSOCIATE DEGREE IN APPLIED SCIENCE
FALL SEMESTER

TECHNICAL			CREDIT HOURS
CETM	214	Adv. Materials Properties & Testing	3
CETM	215	Pavement Design & Construction	3
CETM	226	Highway Technology	3
CETM	227	Hydraulics & Hydrology	3
CONM	111	Construction Practices	3
CONM	112	Plans & Specifications	3
CONM	113	Comp. Appl. for Construction	3
CONM	121	Materials Properties & Testing	3
CONM	122	Construction Surveying & Layout	3
CONM	211	Construction Quantity Estimating	3
CONM	212	Soila & Foundations	3
CONM	221	Statics & Strength of Materials	3
CONM	222	Construction Administration	3

GENERAL EDUCATION			CREDIT HOURS
Communication Competence			
ENGL	150	English 1	3
ENGL	250	English 2	3
Scientific Understanding			
PHYS	211	Introductory Physics 1	4
Quantitative Skills			
MATH	116	Interm. Algebra & Numerical Trig.	4
MATH	126	Algebra & Analytic Trigonometry	4
Cultural Enrichment			
Elective			3
Social Awareness			
Elective			3

A.A.S. Degree Minimum General Educational Requirements in Semester Hours:

Cultural Enrichment Credits - 3
Communication Credits - 6
Social Awareness Credits - 3
Scientific Understanding Credits - 3-4

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FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CONSTRUCTION MANAGEMENT
BACHELOR OF SCIENCE DEGREE
COMMERCIAL/INDUSTRIAL TRACK
FALL SEMESTER
Curriculum Guide Sheet

Total semester hours required for graduation: 130

NOTE: Meeting the requirements for graduation indicated on this sheet is the responsibility of the student. Compliance with this agreement will assure the student completion of the program in the time frame indicated. Your advisor is available to assist you.

FIRST YEAR - FALL SEMESTER			**CREDITS/GRADES**
CONM	111	Construction Practices (MATH 116 concurrent)	3
CONM	113	Computer Applications for Construction (MATH 116 concurrent)	3
CONM	121	Materials Properties and Testing (MATH 116 concurrent) **OR**	
		Cultural Enrichment Elective	3
ENGL	150	English 1 (Placement)	3
MATH	116	Intermediate Algebra and Numerical Trigonometry (Placement)	4
FIRST YEAR - WINTER SEMESTER			
CONM	112	Plans and Specifications (CONM 111)	3
Cultural Enrichment Elective **OR**			
		CONM 121 Materials Properties and Testing (MATH 116 concurrent)	3
CONM	122	Construction Surveying and Layout (MATH 116)	3
MATH	126	Algebra and Analytic Trigonometry (MATH 116)	4
PHYS	211	Introductory Physics 1 (MATH 116)	4
SECOND YEAR - FALL SEMESTER			
CONM	211	Construction Quantity Estimating (CONM 112, 113, MATH 116)	3
CONM	212	Soils and Foundations (CONM 121, MATH 116) **OR**	
		CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211)	3
BCTM	213	Wood and Steel Framing and Finishes (Sophomore Standing) **OR**	
		BCTM 225 Field Engineering (CONM 113, 122)	3
BCTM	223	Mechanical and Electrical Plans and Specifications (CONM 112) **OR**	
		HVAC 337 Mechanical/Electrical Systems for Buildings	3
ENGL	250	English 2 (ENGL 150)	3
SECOND YEAR - WINTER SEMESTER			
CONM	221	Statics and Strength of Materials (MATH 116, PHYS 211) **OR**	
		CONM 212 Soils and Foundations (CONM 121, MATH 116)	3
CONM	222	Construction Administration (CONM 211)	3
BCTM	225	Field Engineering (CONM 113, 122) **OR**	
		BCTM 213 Wood and Steel Framing and Finishes (Sophomore Standing)	3
HVAC	337	Mechanical/Electrical Systems for Buildings OR	
		BCTM 223 Mechanical and Electrical Plans and Specifications (CONM 112)	3
ECON	221	Principles of Economics 1 (Social Awareness)	3

(OVER)

FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CONSTRUCTION MANAGEMENT
COMMERCIAL/INDUSTRIAL TRACK
BACHELOR OF SCIENCE DEGREE
FALL SEMESTER
Curriculum Guide Sheet

THIRD YEAR - FALL SEMESTER			**CREDITS/GRADES**
CONM	311	Structural Analysis and Temporary Structures (CONM 221)	3
CONM	312	Advanced Construction Scheduling (CONM 222)	3
CONM	313	Construction Economics (ECON 221, MATH 126)	3
CONM	323	Issues in Construction Management (Junior Standing, ENGL 250)	3
MATH	132	Calculus for Business (MATH 126) **OR**	
	PHYS 212	Introductory Physics 2 (PHYS 211)	3 or 4
THIRD YEAR - WINTER SEMESTER			
CONM	321	Construction Cost Estimating (CONM 222)	3
CONM	324	Advanced Construction Computer Techniques (CONM 113, MATH 126)	3
PHYS	212	Introductory Physics 2 (PHYS 211) **OR**	
	MATH 132	Calculus for Business (MATH 126)	4 or 3
COMM	121	Fundamentals of Public Speaking	3
BLAW	221	Elementary Business Law	3
STQM	260	Introduction to Statistics (MATH 116)	3
FOURTH YEAR - FALL SEMESTER			
CONM	412	Construction Contracts (CONM 222, BLAW 221, ENGL 250)	3
CONM	451	Value Engineering (CONM 313)	3
MGMT	301/310	Applied Management/Small Business Management	3
Cultural Enrichment Elective			3
Social Awareness Elective			3
MKTG	231	Professional Selling (COMM 121 recommended)	3
FOURTH YEAR - WINTER SEMESTER			
CONM	422	Construction Supervision and Safety (CONM 222, ENGL 250)	3
CONM	499	Construction Project Mgmt. (all previous CONM courses, CONM 422 concurrent)	3
Business Elective (must be 200 level or higher)			3
Cultural Enrichment Elective			3
Social Awareness Elective			3

The student is responsible for meeting all FSU General Education requirements, including global consciousness and race/ethnicity and/or gender, as outlined in the current university catalog. The upper level communications competence requirement will be fulfilled by completing CONM 323, CONM 412 and CONM 422, which are Writing Intensive Courses.

B.S. Degree Minimum General Educational Requirements in Semester Hours:

Cultural Enrichment Credits - 9
Communications Credits - 9 + 3 Writing Intensive Courses
Social Awareness Credits - 9
Scientific Understanding Credits - 7-8

FERRIS STATE UNIVERSITY
COLLEGE OF UNIVERSITY

CONSTRUCTION MANAGEMENT
BACHELOR OF SCIENCE DEGREE
HIGHWAY/BRIDGE TRACK
FALL SEMESTER
Curriculum Guide Sheet

Total semester hours required for graduation: 130

NOTE: Meeting the requirements for graduation indicated on this sheet is the responsibility of the student. Compliance with this agreement will assure the student completion of the program in the time frame indicated. Your advisor is available to assist you.

FIRST YEAR - FALL SEMESTER			**CREDITS/GRADES**
CONM	111	Construction Practices (MATH 116 concurrent)	3
CONM	113	Computer Applications for Construction (MATH 116 concurrent)	3
CONM	121	Materials Properties and Testing (MATH 116 concurrent) **OR**	
		Cultural Enrichment Elective	3
ENGL	150	English 1 (Placement)	3
MATH	116	Intermediate Algebra and Numerical Trigonometry (Placement)	4

FIRST YEAR - WINTER SEMESTER			
CONM	112	Plans and Specifications (CONM 111)	3
Cultural Enrichment Elective **OR**			
		CONM 121 Materials Properties and Testing (MATH 116 Concurrent)	3
CONM	122	Construction Surveying and Layout (MATH 116)	3
MATH	126	Algebra and Analytic Trigonometry (MATH 116)	4
PHYS	211	Introductory Physics 1 (MATH 116)	4

SECOND YEAR - FALL SEMESTER			
CONM	211	Construction Quantity Estimating (CONM 112, 113, MATH 116)	3
CONM	212	Soils and Foundations (CONM 121, MATH 116) **OR**	
		CONM 221 Statics and Strength of Materials (MATH 116, PHYS 211)	3
CETM	215	Pavement Design and Construction	3
ENGL	250	English 2 (ENGL 150)	3
ECON	221	Principles of Economics 1 (Social Awareness)	3

SECOND YEAR - WINTER SEMESTER			
CONM	221	Statics and Strength of Materials (MATH 116, PHYS 211) **OR**	
		CONM 212 Soils and Foundations (CONM 121, MATH 116)	3
CONM	222	Construction Administration (CONM 211)	3
CETM	214	Advanced Materials Properties and Testing (CONM 121, MATH 116)	3
CETM	226	Highway Technology (CONM 113, 122)	3
CETM	227	Hydraulics and Hydrology (MATH 126, PHYS 211)	3

FERRIS STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

CONSTRUCTION MANAGEMENT
HIGHWAY/BRIDGE TRACK
FALL SEMESTER
Curriculum Guide Sheet

THIRD YEAR - FALL SEMESTER		CREDITS/GRADES
CONM 311	Structural Analysis and Temporary Structures (CONM 221)	3
CONM 312	Advanced Construction Scheduling (CONM 222)	3
CONM 313	Construction Economics (ECON 221, MATH 126)	3
CONM 323	Issues in Construction Management (Junior Standing; ENGL 250)	3
MATH 132	Calculus for Business (MATH 126) **OR**	
PHYS 212	Introductory Physics 2 (PHYS 211)	3 or 4

THIRD YEAR - WINTER SEMESTER		
CONM 321	Construction Cost Estimating (CONM 222)	3
CONM 324	Advanced Construction Computer Techniques (CONM 113, MATH 126)	3
PHYS 212	Introductory Physics 2 (PHYS 211) **OR**	
MATH 132	Calculus for Business (MATH 126)	4 or 3
COMM 121	Fundamentals of Public Speaking	3
BLAW 221	Elementary Business Law	3
STQM 260	Introduction to Statistics (MATH 116)	3

FOURTH YEAR - FALL SEMESTER		
CONM 412	Construction Contracts (CONM 222, BLAW 221; ENGL 250)	3
CONM 451	Value Engineering (CONM 313)	3
MGMT 310	Small Business Management	3
Cultural Enrichment Elective		3
Social Awareness Elective		3
MKTG 231	Professional Selling (COMM 121 recommended)	3

FOURTH YEAR - WINTER SEMESTER		
CONM 422	Construction Supervision and Safety (CONM 222ENGL 250)	3
CONM 499	Const. Project Mgmt. (all previous CONM courses, CONM 422 concurrent)	3
Business Elective (must be 200 level or higher)		3
Cultural Enrichment Elective		3
Social Awareness Elective		3

The student is responsible for meeting all FSU General Education requirements, including global consciousness and race/ethnicity and/or gender, as outlined in the current university catalog. The upper level communications competence requirement will be fulfilled by completing CONM 323, CONM 412 and CONM 422, which are Writing Intensive Courses.

B.S. Degree Minimum General Education Requirements in Semester Hours:

Cultural Enrichment Credits - 9
Communications Credits - 9 +3 writing intensive courses
Social Awareness Credits - 9
Scientific Understanding Credits - 7-8

American Council for Construction Education

1300 Hudson Lane, Suite 3
Monroe, LA 71201-6054
Phone: 318-323-2816
Fax: 318-323-2413
E-mail: acce@iamerica.net

March 9, 1998

Dr. William A. Sederburg
President
BIS-421 E
Ferris State University
Big Rapids, MI 49307-2737

Dear Dr. Sederburg,

At its February 21, 1998, Mid-Year Meeting, the American Council for Construction Education (ACCE) Board of Trustees reviewed the application for renewal of accreditation of the Construction Management Program at Ferris State University. The Board had available to it the reports of its Visiting Team under the chairmanship of Dr. Roger W. Liska, Clemson University, and its Accreditation Committee under the chairmanship of Professor Herbert McCaskill, Northeast Louisiana University. This letter is to inform you that the Board voted to grant a six year accreditation of that program -- i.e., for the period March 1, 1998 through February 28, 2004.

The final report of the Visiting Team, as acted upon by the Board, is enclosed. This report, as do all ACCE accreditation and reaccreditation reports, contains a delineation of perceived program strengths, weaknesses, and potentials. It is the hope of ACCE that the cited weaknesses will be addressed in coming years, while maintaining program strengths and pursuing program potentials.

To this end, ACCE requires that you file a report of progress at the end of the third year, and no later than December 1, 2000. Should it be necessary to alter this date for any reason, we will notify you well in advance, and should it become necessary for you to ask for an extension, we request that you do the same.

The Board of Trustees commends Ferris State University for a progressive and well run program. The third year interim report should be comprehensive and responsive to all concerns raised in the Visiting Team Report and should address the faculty development issue.

The ACCE Board of Trustees extends congratulations on this accreditation, and asks that I express its appreciation for the many courtesies extended to our Visiting Team and for the positive way in which your faculty and staff responded throughout.

We wish you continued success with your Construction Management program, and feel confident that your graduates, the building community, and the Nation are richer for your efforts.

Sincerely,

David R. Mattson
President

lm

cc: Professor Herbert McCaskill, Chair
Accreditation Committee

Dr.Joseph Chartkoff
Vice President/Academic Affairs

Professor Charles A. Matrosic, Head
Construction and Facilities Department

Enclosure: Visiting Team Report

CLEMSON
UNIVERSITY

To: Dan Dupree

From: Roger Liska RL

Date: January 13, 1998

Subject: Final Visiting Team Report - Construction Management Program - Ferris State University

I am sending along, on disk, the above subject document. I have incorporated the responses I received from the President of the University into the enclosed report.

I am also returning under separate cover the documents provided by the department used to conduct the visit including the Self-Study document. If you have any questions, please don't hesitate to contact me.

Thank you for the opportunity to Chair a Team of outstanding professionals.

RWL:bMU:WORDOCS/DUPREE.DOC

COLLEGE OF ARCHITECTURE, ARTS & HUMANITIES
Office of the Dean Business Management Office 201 Strode Tower Box 340501A Clemson, SC 29634-0501A

American Council for Construction Education

Reaccreditation Visit To

Construction Management Program

Ferris State University
Big Rapids, Michigan

October 25 - 28, 1997

VISITING TEAM

Team Chair
Dr. Roger W. Liska, FAIC, MCIOB, PE
Clemson University
Clemson, SC

Team Member
Dr. James W. Craig
Texas A & M University
College Station, Texas

Team Member
Mr. David R. Mattson, FAIC, CPC
D.R. Mattson, Inc.
Scottsdale, AZ

Validation Visit Observer
Professor Herbert L. McCaskill, FAIC
Northeast Louisiana University
Monroe, LA

Member-In-Training
Mr. O.L. Pfaffmann, FAIC, CPC
Woods Construction, Inc.
Fraser, MI

Industry Observer
Mr. Henry Landau
H.S. Landau, Inc.
Ann Arbor, MI

SECTION I INTRODUCTION

1. Size, brief history, type, and purpose of the institution.

Ferris State University was founded in 1884 as a private industrial school in Big Rapids, Michigan. The university joined the state's higher education system in 1950. The university provides career oriented education to approximately 9,500 students each year. More than 100 undergraduate programs, two master's degrees and two doctorates are offered by Ferris State University's eight colleges: Allied Health Sciences; Arts and Sciences; Business; Education; Optometry; Pharmacy; Technology; and University College. In addition to the main campus site at Big Rapids, a number of programs are also offered at off-campus locations in Traverse City, Muskegon, Dowagiac, Flint, and the Applied Technology Center in Grand Rapids. The Construction Management program offers a few courses at the Grand Rapids site.

The Statement of Mission of Ferris State is to be a national leader in providing opportunities for innovative teaching and learning in career-oriented, technological and professional education. Ferris enrollment is fairly evenly divided between four year and professional degree programs and the two-year programs. Approximately 50% of the students are in bachelor's degree programs. Ferris employs over 463 full-time faculty. In addition, adjunct faculty play important roles on campus. Of the full-time faculty, 39% possess earned doctorates, while an additional 52% have attained master's degrees or beyond. There exists a collective bargaining agreement for the faculty with the university.

2. Institution organization and location of the construction unit.

The chief executive officer of the university is President William Sederburg. He reports to a Board of Trustees who are appointed by the Governor of the State of Michigan for eight year staggered terms. The Vice President of Academic Affairs reports directly to the President. Presently the position is filled by an interim Vice President, Joseph Chartkoff. A search is underway for a permanent replacement. There are also Vice Presidents for Administration and Finance, Student Affairs, and University Relations.

Reporting to the Vice President of Academic Affairs are the Deans of the eight colleges. The Dean of the College of Technology, Mark Curtis, is also in interim status. There is also a search being conducted to fill this position. Reporting to the Dean are three Assistant Deans who also serve as Department Heads: Douglas Chase, Department of Design, Manufacturing and Graphic Arts; Jack Richards, Department of Transportation and Electronics; and, Charles Matrosic, Department of Construction and Facilities. Each of the departments have a number of two-year and four-year degree programs which are led by coordinators who are provided 50% release time for administration duties. The BS degree in Construction Management is housed in the Construction and Facilities Department.

3. Size, number of faculty members, brief history, and purpose of the construction unit.

Ferris State University has offered construction-related education for over 40 years. Initial programming began at the associate degree level with Architectural Technology in 1954, Surveying Technology in 1958, Construction Engineering Technology in 1960 and Building Construction Technology in 1968. Baccalaureate

programming began in 1973 with the BS in Surveying (now Surveying Engineering).

Development of a baccalaureate degree in Construction Management began in the late 1970's. The Construction Management program was designed as an upper division (third and fourth year) sequence leading to the BS degree for graduates of the associate degree programs in Architectural Technology, Construction Engineering Technology and Building Construction Technology. The BS Construction Management Program was implemented in the fall quarter of the 1981 - 82 academic year. During the 1989 - 90, academic year, construction management courses were first offered to employed individuals at the Ferris State University Applied Technology Center (ATC) in Grand Rapids, Michigan. The university continues to offer two CM courses a semester in Grand Rapids. Each third and fourth year course (and some from the second year) has been taught in Grand Rapids a number of times since the 1989-90 academic year. All ATC courses are taught by regular program faculty.

In the Fall of 1993, Ferris State University switched from quarters to semesters. At that time, a new 0+4 BS degree program in Construction Management was instituted for incoming students committed to the four year degree. The Construction Engineering Technology associate degree program has become the Civil Engineering Technology program. The first two years of the four-year degree program did not mirror any of the two-year feeder programs. In the Fall of 1996, the curriculum was revised to create two distinct tracks (Commercial/Industrial and Highway/Bridge). This revision also made the transition from the Building Construction Technology and Civil Engineering Technology associate degree programs to the BS in Construction Management transparent (a return to true 2+2 programming). In addition, the first year of the Building Construction Technology, Civil Engineering Technology and the Construction Management programs is identical in order to provide undecided students flexibility. The transition from the Architectural Technology associate degree to the BS degree in Construction Management is now 2+2.5 in order to include essential first and second year courses. In essence, students laddering from Architectural Technology to Construction Management are treated as if they were external majors.

All Building Construction and Civil Engineering Technology students are considered to be enrolled in the Construction Management program, as well as those students enrolling directly into the four-year BS in Construction Management program. There are approximately 200 enrolled in the program. The majority, 180, are enrolled on the Big Rapids campus. The balance are taking courses on a part-time basis at the ATC. The self-study indicates this has been done for two reasons. First, many two-year enrollees are uncertain as to their ultimate goals, and many go on to complete the four-year degree. Second, recent changes in coding the status of entering students make it difficult to determine their status on a consistent basis throughout the period covered by the self-study document.

The Construction Management Program is one of four programs housed in the Department of Construction and Facilities. The others are Architectural Technology and Facilities Management, Surveying Technology and Surveying Engineering, and HVACR Technology and HVACR Engineering Technology. There are also associate degree programs in Building Construction Technology and Civil Engineering Technology housed in the same academic unit. The department is administered by a head - Charles Matrosic. The Construction Management program is led by a coordinator - Robert Eastley. Robert is also responsible for the Construction Technology two-year programs. There are eight full-time faculty positions authorized, which are currently filled with seven full-time tenured/tenured-track faculty and one full-time temporary faculty member. The coordinator is included in the full-time faculty count. He is provided 50% release time for his administrative duties.

The self-study document presents the following mission statement for the Construction Technology and Management programs: The mission of the Construction Technology and Management programs is to educate students in Building Construction Technology, Civil Engineering Technology and Construction Management through a broad based foundation of appropriate technical and general education courses that will provide them with highly competitive skills and knowledge, construction-related employment opportunities at graduation and the potential for advancement in their careers.

4. Accreditation history - first accredited and reaccredited.

The Construction Management Program was first accredited in 1992. This report covers the first reaccreditation visit.

5. Degree title and credit hours required.

The degree title is Bachelor of Science in Construction Management. The total semester hours required are 130.

6. Other degree programs administered by the construction unit.

Other degree programs administered by the Construction Technology and Management Program areas are the Associate in Applied Science programs in Building Construction Technology and Civil Engineering Technology.

7. Name of regional accrediting agency of the institution.

The regional accreditation agency is North Central Association of Colleges and Schools.

8. Name and positions of persons interviewed during the visit.

Dr. William A. Sederburg, President, Ferris State University
Dr. Joseph Chartkoff, Interim Vice President for Academic Affairs
Dr. Mark A. Curtis, Interim Dean, College of Technology
Dr. Daniel Burchman, Vice President of Student Affairs
Dr. Thomas Oldfield, Assistant Vice President Academic Affairs
Mr. Raymond Dickinson, Librarian Liaison
Professor Charles Matrosic, Assistant Dean and Head, Construction and Facilities Department
Associate Professor Robert Eastley, Coordinator, Construction Technology and Management
Professor M. Kantor, Coordinator, Architectural Technology and Facilities Management
Professor S. Hashimi, Coordinator, Surveying Technology and Surveying Engineering
Professor Richard Shaw, Coordinator, HVACR Technology and HVACR Engineering Technology
Professor Edward Brayton, Construction Technology and Management Program
Associate Professor David Hanna, Construction Technology and Management
Assistant Professor Lee Templin, Construction Technology and Management
Assistant Professor John Moore, Construction Technology and Management
Assistant Professor Kenneth Reinick, Construction Technology and Management
Associate Professor John Schmidt, PhD, Construction Technology and Management
Ms. Kelley Seitter, visiting faculty member, Construction Technology and Management
Dr. Robert von der Osten, Professor, English
Assistant Professor Jay Christafferson, Physics
Mr. Richard Bethel, Adjunct instructor, Marketing
Mr. A. John Becsey, Program Industry Advisory Committee
Mr. Chuck Breidenstein, Program Industry Advisory Committee
Mr. Duane Bremer, Program Industry Advisory Committee
Ms. Deb DeYoung, Program Industry Advisory Committee
Mr. Phillip Frederickson, Program Industry Advisory Committee
Mr. Jerry Hanks, Program Industry Advisory Committee
Ms. Kimberly Ridings, Program Industry Advisory Committee
Mr. Bob Shilander, Program Industry Advisory Committee
Mr. F. J. VanAntwerp, Program Industry Advisory Committee
Students from various class levels and student club leaders

SECTION II ORGANIZATION AND ADMINISTRATION

A. INSTITUTION

1. The organizational structure of the institution provides a basis for establishing authority and responsibility, utilizing resources and achieving goals within the construction education unit. The institution administration also has a positive attitude and support for the construction education unit.

   The administration of the institution is very supportive of the Construction Management program. However, there are some feelings of concern among the faculty due to the interim status of the Vice President for Academic Affairs and Dean of the College of Technology.

2. Institutional support of the administration of the construction education unit accords status within the institution comparable to that of other academic units of similar size and function with regard to finances, staffing, teaching loads, promotions in rank and salary, appointment to institution policy making committees, program priorities, and other academic affairs.

   The Construction Management program is accorded status within the institution comparable to that of other academic units of similar size and function within the college and institution. The program is clearly an identifiable academic unit on campus and highly recognized and respected as such.

B. CONSTRUCTION UNIT

1. The construction education unit is headed by a qualified administrator who has sufficient authority, support, and time to accomplish the unit's goals and objectives.

   The program coordinator, Robert Eastley, is provided 50% release time to carry out the required duties for which he is responsible. There is a written job description of his responsibilities and all those administrators, faculty and staff interviewed provided positive comments of Robert's performance. Robert indicated he is satisfied with the support he receives from upper administration along with those which with he works.

2. The institution and the construction unit administrator insure that the total administrative work load is carefully controlled in relation to the total work load of the administrator.

   The faculty at Ferris State University are party to a collective bargaining agreement with the university. The coordinator of the program is released 50% to perform administrative duties. His responsibilities appear to be realistic and are carefully managed by the department head and Dean of the College. He is very active in student recruitment activities. In terms of performing faculty evaluation, it should be noted that as a member of the faculty bargaining unit, he has the exact same role as any other faculty member in the evaluation of tenure-track faculty. His role as a faculty program coordinator adds no other responsibilities for the evaluation of other faculty, tenured or not. The Visiting Team feels the program coordinator is performing all his assigned duties as contained in his formal job description effectively.

3. The administrator provides sufficient leadership and supervision to develop a strong academic program.

   The program coordinator appears to be providing sufficient leadership and supervision to develop a strong academic program within his job description. All those who work with Robert indicate that he is carrying out his duties in an effective and efficient manner. The Visiting Team feels it is important that the current department head continue to provide support to the coordinator and encourage and support his involvement in professional activities relating to the development and growth of the department including ACCE.

4. The organizational structure of the construction education unit is designed to encourage communication, coordination, and interaction between administrative officers, faculty, students and other disciplines.

The Visiting Team found the organizational structure of the construction education unit very conducive to communication, coordination and interaction among administrative officers, faculty, students and other disciplines.

5. The administrative structure is sufficiently flexible to make the functional changes necessary to attain program objectives.

The Visiting Team found the administrative structure sufficiently flexible to make any needed changes needed to meet program objectives.

6. The administrator encourages professional development of faculty and administrative policy insures that opportunities for professional development are made available and used by the faculty.

Even though professional development of the faculty is occurring, there does not exist a formal professional development process to insure that all faculty are remaining current in their teaching areas and improving upon their instructional skills and knowledge. The Visiting Team views this as a weakness and recommends such a process be developed and implemented as part of the ongoing faculty evaluation process.

7. The administrator and the faculty cooperate to develop a program of high quality and establish a structure to facilitate planning and evaluation for continuous improvement of the total program.

The faculty are totally involved in all matters relating to planning and evaluation for continuous improvement of the program.

8. The construction unit has clear and concise policies relative to curriculum, faculty, students, and facilities.

There are clear and concise policies and procedures relative to curriculum, faculty, students and facilities. As noted previously, the faculty are party to a collective bargaining agreement. This agreement, among other things, covers all faculty teaching and other responsibilities along with salaries and benefits.

C. BUDGET

1. Within the institution, budget allocations are compatible with the size of the unit with respect to students, faculty and staff.

The Visiting Team found that budget allocations are comparable with academic units of similar sizes within the college and university.

2. Budget support is adequate to enable the program to achieve its stated purposes.

The budgetary process is clear and understood by all involved. The Visiting Team feels the current budget is adequate. However, in light of some of the long-range program goals, the need for a formal faculty development program and the opportunity to increase its visibility and credibility, additional funds will be needed. The administration and faculty should work together to identify additional sources of revenues to move the program to the next level of educational excellence within the university.

3. Non-budgeted funds are used to supplement institution funds allocated by the administration rather than to replace those funds.

The program does receive soft monies to support such things as faculty travel. These funds are not used to replace university funding.

SECTION III CURRICULUM

A. PROGRAM DESCRIPTION

1. The curriculum is responsive to social, economic, and technical developments and reflects the application of evolving knowledge in construction and in the behavioral and quantitative sciences.

The Visiting Team found the curriculum very current and meeting the needs of the constituencies it serves. This was supported by comments received from graduates of the program and members of the Industry Advisory Committee who hire the graduates of the program.

2. The professional program offered by the construction education unit is consistent with the philosophy and the purposes of the institution and the goals as established.

The Visiting Team found the curriculum to be consistent with the philosophy and purposes of the institution and construction education unit.

3. Recognizing the autonomy of educational institutions in the matter of curriculum development, and the levels and designations of the degrees awarded; it is preferred that the word "Construction" be included in the name of the degree awarded.

The name of the degree is "Construction Management".

B. CURRICULUM

1. The construction education unit develops its own program goals and objectives and particular emphasis, and prescribes the number of courses for graduation, sequencing of study, course numbers, and titles.

The Construction Management program does develop its own goals, objectives, required courses for graduation, sequencing of study, course numbers and titles. Calculus, statistics, and the second physics course are being taken during the Junior year. The Visiting Team felt this is too late in the program since these courses present fundamentals which the students should have as prerequisites to courses taken during the third year of the program. Also, the Visiting Team is concerned about the prerequisites for BCTM 213 (sophomore standing), HVAC 337 (none) and CETM 215 (none). As the curriculum presently exists, students can take these courses without having taken some of the construction fundamental courses such as CONM 112, Plans and Specifications or BCTM 223, Mechanical/Electrical Plans and Specifications. The program Industry Advisory Committee expressed some concerns that students may not be getting sufficient instruction in the fundamentals that underpin many of the construction-related courses. One example was that of the need for accounting fundamentals prior to taking courses in construction management. The Visiting Team is concerned about the above noted issues and recommends that they be considered in future curriculum reviews. Care must be taken not to sacrifice the teaching of fundamentals for more applied aspects because of the many changes taking place in the construction profession.

2. The curriculum is designed to accommodate continually expanding requirements of the profession, advancements in knowledge, and the contributions of related disciplines.

The Visiting Team found the curriculum to be accommodating to the continuing changes of the construction industry. However, the Visiting Team felt that in any future curriculum reviews that the issue of contributions of related disciplines be carefully considered. For example, there are some courses in the Architectural Technology program that would benefit the student in the program in that he or she will be working with design professionals following graduation.

3. The construction education unit strives to provide offerings beyond the recommended minimums of the ACCE Standards and Criteria for Accreditation.

The program is sensitive to the needs of its constituencies and offers courses beyond the recommended minimums of ACCE.

4. The total curriculum supports the goals and objectives of the construction education unit, provides balanced content, and meets ACCE's recommended minimum credit hours in the categories of General Education, Mathematics and Science, Construction Sciences, Business and Management, Construction, and Other Requirements.

The curriculum supports the mission of the program. In addition, it provides a balanced content and meets ACCE's recommended minimum credit hours in all but the Business and Management category. The Visiting Team agreed within which ACCE curriculum categories the various courses were placed by the program except for Computer Applications for Construction (CONM 113), Advanced Construction Computer Techniques (CONM 324) and Issues in Construction Management (CONM 323). The team felt that one credit hour each of the computer application courses belongs in the Construction category and that two credit hours of the Issues in Construction Management course also belong in the Construction category. This would result in the following course credit hour distribution comparison:

ACCE Category	Self-Study Hours	VT Consensus	ACCE Rec. Min.
General Education	24 credit hrs	24 credit hrs	18 credit hrs
Mathematics and Science	20 credit hrs	18 credit hrs	18 credit hrs
Business and Management	21 credit hrs	19 credit hrs	21 credit hrs
Construction Sciences	24/27 cr. hrs*	24/27 cr. hrs*	24 credit hrs
Construction	33/30 cr. hrs*	37/34 cr. hrs*	27 credit hrs
Other	8 credit hrs	8 credit hrs	12 credit hrs

* The hours vary depending if the student selects the Commercial/Industrial track (the first number in the pair) or the Highway/Bridge track (the second number in the pair) in the program.

The Visiting Team feels the minor difference in the Business and Management category is not a weakness but only a concern. This is also true for the number of credit hours in the Other category. The program is doing a good job of integrating oral and written communications in a formalized manner into the various construction courses.

SECTION IV FACULTY

A. QUALIFICATIONS

1. The faculty possess appropriate academic qualifications, professional experience, and pursue scholarly and creative activities essential to the successful conduct of an associate/ a baccalaureate level academic program of construction.

   The faculty possess appropriate academic qualifications and professional experience consistent with the courses they teach. Current teaching loads make the pursuit of scholarly and creative activities difficult which may be inhibiting the faculty's professional development. Furthermore, the development and implementation of a formal professional development program for the department would help faculty become more involved in service, research and other related activities to insure their continuing growth.

2. The institution provides the faculty with rank, status, salary, and benefits commensurate with their educational background and professional experience.

   These issues are all included in the collective bargaining agreement with the university. The faculty didn't appear to have any problems with the conditions contained within the agreement.

3. The educational preparation of each faculty member includes study in the areas for which he has teaching responsibility and includes adequate background in the supporting disciplines from which his area of specialty draws major concepts and principles.

   The Visiting Team found the educational preparation of the faculty adequate for their assigned responsibilities.

4. Evaluation of faculty competence recognizes appropriate professional experience as being equally as important as formal educational background and that continuing professional growth of the faculty is a prerequisite to effective teaching.

   The formal evaluation of all faculty is covered by a collective bargaining agreement.
   The previous agreement did not have a requirement for the formal evaluation of tenured faculty. This is now a requirement in the new agreement. However, the program does have a weakness, as previously mentioned, in that it does not have in place a formal faculty professional development program.

5. The faculty actively participate in professional organizations and community services, and in interpreting construction education to other professions and to the general public.

   Many of the faculty in the department are involved in professional organizations and community service activities. The Visiting Team feels that the level of faculty involvement in professional organizations could increase as additional resources including teaching staff increase.

6. The size of the construction faculty is commensurate with the number of courses offered, the number of students enrolled, and the other responsibilities of the faculty and is appropriate to the type of instruction and comparable to that of the faculty of other academic programs of the institution.

   In terms of their teaching loads and numbers of students, the existing number of construction faculty appears to be adequate. However, any further increase in enrollment would dictate the need for additional faculty. Furthermore, if faculty are to become more active in service and research activities, they will have to be released from some of their teaching responsibilities, necessitating the employment of a ninth full time faculty member.

B. STAFF ASSIGNMENTS

1. Staff assignments take into consideration the number of lecture hours, number of laboratory hours, number of separate preparations, class size, availability of teaching assistants, counseling activities, administrative activities, committee assignments, extension or continuing education commitments, and research activities.

   Staff assignments are all covered by the existing collective bargaining agreement. All full time faculty also serve as academic advisors for a set number of students. The students interviewed were satisfied with the advising they were receiving.

C. EMPLOYMENT POLICIES

1. Faculty compensation is competitive with comparable positions in other institutions and industry to insure that quality faculty and high morale exist.

   Faculty compensation is included as part of the collective bargaining agreement. The faculty interviewed appeared to be satisfied with their salaries and benefits package. The salaries are competitive with those in the region.

D. PROFESSIONAL DEVELOPMENT

1. Consulting work is desirable and encouraged, provided such activities do not conflict with normal assigned duties and responsibilities of the faculty member.

   The faculty are performing consulting work related to their areas of expertise.

E. FACULTY EVALUATION

1. A clearly defined program of annual faculty evaluation is in place and may include student, peer, and/or administrator evaluations.

   An annual faculty evaluation program is in place and being carried out in accordance with the appropriate conditions contained in the collective bargaining agreement. Faculty appear to be satisfied with the process as do the students.

SECTION V STUDENTS

A. ADMISSIONS AND ENROLLMENT

1. Qualifications of students admitted to the construction education unit are comparable with those of students in other areas of the institution and appropriate to the requirements for construction education.

   The university has an open enrollment policy. The policy, though clear, requires administration to carefully manage the various academic paths students can take (i.e. two-year program only, two plus four-year program, four-year program, etc.). If not managed carefully, it can impact aspects of the BS program such as curriculum. This issue needs to be considered in all future curriculum reviews. The qualifications

of students admitted to the program are comparable with those of students in other programs in the college and university. Finally, some of the information required to be provided in the self-study document was not. This data relates to the geographic origin of the students and the success/failure rates by various class levels. The Visiting Team was informed that this information did not exist in an easily accessible manner from the university. This is a concern of the team in that such information would be needed to insure effective student recruitment and to monitor student progress through the program including the recognition of outstanding academic performance and providing closer guidance to those students experiencing difficulties in their studies.

2. Admission policies, where applicable, are directed toward students with the ability and credentials for successful completion of the curriculum.

The Visiting Team found evidence of the admission policies being directed toward students with the ability and credentials for successful completion of the curriculum.

3. Recruitment and publicity for the construction program are comparable to other programs of the institution.

The Visiting Team found that recruitment and publicity for the construction management program to be comparable to other programs in the college and university. It is recommended that administration, faculty and members of the Industry Advisory Committee consider broadening the recruitment effort to other states in the midwest as time and funds become available. By so doing, the program will gain greater visibility resulting in the availability of additional resources and opportunities. The Visiting Team feels this is an undeveloped potential for the construction management program.2

B. ACADEMIC PROGRESS

1. An organized system of counseling and professional guidance is available to all students in the construction education program so that their needs, interests, and abilities are considered in preparing and implementing a plan of study.

Students are provided the services of a college-level counselor. In addition, each student is assigned one of the faculty members as their academic advisor. The students interviewed all expressed satisfaction with the advising they were receiving.

2. A record system exist that keeps both the student and advisor informed regarding the students' progress toward completion of degree requirements.

There is a very effective student progress reporting system in place.

C. EXTRACURRICULAR ACTIVITIES

1. Students are encouraged to participate in activities in addition to their academic studies. Such activities include involvement with industry-based professional and other organizations.

The students are very involved in extracurricular activities, including participation in various national construction professional and trade associations.

D. GRADUATES

1. There is an established plan for communication with alumni and periodic follow-up of graduates.

   The university has recently embarked on a formal outcome assessment process which includes surveys of graduates of the Construction Management program.

SECTION VI FACILITIES AND SERVICES

A. PHYSICAL FACILITIES

1. Physical facilities are well maintained and organized to accommodate academic activities such as lectures, discussions, seminars, conferences, laboratory work, and research.

   Excellent classroom. laboratory and computer facilities exist for the program. They are well maintained and organized and very conducive to learning. The students expressed the need for additional hours for the computer lab to be open and a dedicated computer technician for the department so that problems are alleviated in a more timely manner.

2. There are laboratory facilities for the teaching of construction principles and practices and facilities for office oriented activities with adequate storage space for multiple copies of plans and specifications, and facilities for field-oriented activities.

   There are well equipped and maintained laboratories. With so many different labs and different types of instructional equipment, the Visiting Team is concerned that a long range plan is not in place indicating how the equipment will be replaced or refurbished on a regular cycle to insure its availability for instruction. The team is also concerned that as the student population increases additional space will be needed and that no plan exists to accommodate the need.

B. LIBRARY

1. Library facilities are adequate and have holdings related to the general and professional components in the various fields of construction.

   The Visiting Team found the library facilities to be adequate both in terms of space and construction-related holdings in terms of periodicals, books and other materials. The students interviewed expressed some concern about the limited hours which the library is open.

2. There is evidence of both adequacy and use in the selection of library materials and responsibility for their effective use.

   The Visiting Team found that faculty require the students to utilize the library in various course assignments. The students interviewed expressed a concern for the lack of an adequate selection of construction-related materials. The Visiting team found just the opposite and is concerned that the students are not fully aware of how to access all the available resources in the facility. The team recommends that all students be required to participate in an orientation program of what is available in the library and how to access the various resources.

C. OTHER SERVICES

1. Appropriate services on campus are effectively used, including the computer center, audiovisual, placement, student services, and financial aids.

The Visiting Team found that students and faculty are effectively utilizing the various support services which exist on campus.

SECTION VII RELATIONS WITH INDUSTRY

A. SUPPORT FROM INDUSTRY

1. An industrial advisory committee, consisting of representatives from the construction industry, is actively involved in an advisory role for the construction program.

A dedicated and enthusiastic industry advisory committee exists. Those interviewed indicated a strong interest in the program and the success of its graduates.

2. The committee meets on a regular basis for the purpose of advising and assisting the development and enhancement of the program. The committee is representative of the potential employers of the graduates of the program.

The advisory committee is representative of the potential employers of the graduates of the program. At the present time, the committee meets once a year. In discussions with members of the committee, it was felt that at least two meetings per year would be more appropriate. The Visiting Team agrees with this and recommends the appropriate program personnel follow up to insure this occurs.

B. SUPPORT FOR INDUSTRY

1. The construction program maintains continuous liaison with the various associations to determine needs of the construction community for the purpose of establishing educational and professional development activities for the construction industry.

The program has liaisons with various local, regional and national construction-related trade and professional organizations and conducts some professional development activities for the industry. The Visiting Team feels that an undeveloped potential exists in that these relationships should be strengthened as the needed time and resources become available. An increase in activities with the various organizations will result in additional resources for the program including needed funding to support faculty professional development activities and the purchase of equipment.

C. STUDENT-INDUSTRY RELATIONS

1. There is well documented evidence of industry involvement such as field trips and speakers for student clubs.

The students in the construction program are actively involved with the construction industry through such means as participating in field trips, interacting with guest speakers and participating in many construction association-sponsored events and activities, including summer internships.

SECTION VIII PROGRAM PLANNING AND OUTCOME ASSESSMENT

1. The program has a well defined mission statement with established goals and specific objectives for achieving each goal that reflect ACCE Criteria and Standards.

   The program mission statement is contained in the self-study document as are goals and objectives. The Visiting Team is concerned about the mission statement in that it pertains to both the Construction Technology and Construction Management degree programs. The mission statement should be revised so that each program has its own. Furthermore, the goals and objectives contained in the self-study were not linked or directly related. Though this is a concern of the Visiting Team this will be alleviated with the implementation of the university's Unit Action Assessment Process.

2. Program goals and objectives are realistic and attainable.

   The program has recently prepared a Unit Action Plan for FY 1998 which was contained in the self-study document. The Visiting Team feels the various goals contained in the Unit Action Plan are realistic and attainable.

3. The construction education unit's plan forms the basis for assessing outcomes of the program. Assessment input is obtained from all program constituencies, such as students, graduates, benefactors, employers, industry, faculty and administration.

   The Visiting Team feels the construction program's Unit Action Plan forms the basis for assessing outcomes of the program. The team also feels input is being obtained from various appropriate constituencies such as students, faculty, administration, graduates, and members of the industry advisory committee. The Visiting team recommends that assessment input also be obtained from employers of the program's graduates. In addition, conducting graduating student exit interviews should be considered.

4. The planning and evaluation process is incorporated into the program plan in such a manner as to foster enhanced student achievement with respect to the construction education degree program.

   The Visiting Team found that the planning and evaluation process is incorporated into the program's Unit Action Plan.

5. Adequate resources are available so that the program may structure a mission statement, program goals, and measurable objectives which will serve to ensure continual improvement of the program.

   The Visiting Team found that adequate resources and support are available to ensure an effective and comprehensive outcome assessment process.

6. Resources support a systematic means for collecting, quantifying, and analyzing data relative to the program objectives; formulation of conclusions based on this data, and appropriate program modifications.

   Adequate resources are available to support the administration of the comprehensive outcome assessment process for the program.

SECTION IX REVIEW OF LAST VISITING TEAM'S WEAKNESSES, CONCERNS, AND UNDEVELOPED POTENTIALS

1. The previous Visiting Team report indicated four weaknesses. They were as follows:

A. Curriculum deficient in content with respect to Mathematics and Science and Business and Management.
B. No integrated plan for outcome assessment.
C. Dedicated computer space inadequate.
D. Minimal institutional support for travel and faculty development.

The Visiting Team feels that all of these weaknesses have been substantially alleviated. However, it is concerned about the minor deficiency in the number of credit hours in the Business and Management category. In addition, it fees the lack of a formal faculty professional development program is a weakness even though there appears to be financial support for faculty development.

2. In terms of undeveloped potentials and concerns, the following were expressed in the previous visiting team report:

A. There is an apparent insufficient use of industry and alumni resources for instructional purposes.

Though the existence of additional resources would always continue to increase the effectiveness of the program, the current Visiting Team feels this is no longer a concern.

B. The Technology Transfer Center seems to be under utilized with respect to professional development and applied research opportunities.

This unit is now named the Institute for Construction Education and Training. The organization is being utilized by faculty within the program to conduct professional development courses for the construction industry. The Visiting Team feels this organization continues to be an undeveloped potential for the program.

C. There appears to be no evidence of scholarship opportunities for students. Perhaps industry support could be expanded in this area.

There are presently many opportunities for students to obtain scholarships. This is no longer a concern.

D. The issue of women and minority involvement in Construction Diversity, is apparently not being addressed.

There is no requirement in ACCE standards to address these issues. As the diversity of the population in this country increases so will the makeup of the faculty and students in the program.

E. An excellent opportunity exists, but apparently is not being utilized, for integration of theoretical course content with laboratory observations in existing facilities.

The Visiting Team feels this undeveloped potential still remains.

F. Internships for faculty and students as well as co-op opportunities for students should be investigated.

Students are very active in obtaining summer internships. Faculty, who so desire, find appropriate work in the construction industry during summer months. The Visiting Team feels the development of a more active formal co-op program still remains as an undeveloped potential.

SECTION X STRENGTHS, WEAKNESSES, CONCERNS, AND UNDEVELOPED POTENTIALS

1. List strengths, weaknesses, concerns, and undeveloped potentials.

Strengths

1. The students in the program are very supportive of the faculty and program as a whole. They are very concerned for the success of the program and will make valuable advocates upon graduation.

2. The faculty is well qualified for the courses they are teaching. They are energetic and concerned for the success of their students. Further more, they are supportive of the program and will work hard to ensure its continuing success.

3. The program has excellent relations with the construction industry and work should continue to enhance and enlarge this relationship outside the State of Michigan.

4. The program is highly respected by university administration due to an excellent working relationship between the leadership of the program and department and administration.

Weaknesses

1. A formal faculty professional development program does not exist.

Concerns

1. Calculus, statistics and the second physics course are taken in the junior year which is too late since these courses cover fundamentals which the students should have as prerequisites to courses taken the third year in the program.

2. The prerequisites for BCTM 213 (sophomore standing), HVAC 337 (none), and CETM 215 (none) in that students can take these courses without having taken some of the construction fundamental courses such as CONM 112, Plans and Specifications or BCTM 223, Mechanical/Electrical Plans and Specifications.

3. The program is two semester credit hours short of the ACCE minimum recommended for the Business and Management category. In addition, is short four semester hours in the Other category. In the response to the review of the Visiting Team report, the program proposes to move four (4) semester hours from the Self-Study total in General Education to the Other category. So doing would remove this issue as a Concern.

4. Current faculty teaching loads make the pursuit of scholarly and creative activities difficult which may be inhibiting the faculty's professional development.

5. The self-study document lacked pertinent information related to geographic origin and success/failure rates of the program's students. This type of information should be made available to the program for use in its internal management.

6. Any plan to increase the size of the student body, must also include that for faculty. Current teaching loads and class sizes will be dramatically affected by an increase in student enrollment without a corresponding increase in faculty size.

7. Current laboratory space restrictions will preclude a major increase in the size of student enrollment. If an increase in enrollment is desired, a formal plan for an increase in laboratory space will need to be developed and implemented by the institution.

8. With so many different types of equipment housed in the various laboratories, a formal plan should be developed indicating how equipment will be replaced or refurbished on a regular cycle to insure its availability for instruction.

9. The program mission statement should be rewritten to cover only the construction management program.

Undeveloped Potentials

1. Administration, faculty and members of the Industry Advisory Committee should consider broadening the program's recruitment effort to other states in the midwest as time and funds become available.

2. The Industry Advisory Committee is active and sincerely interested in the program's well-being. The program leadership should consider using this group on a more active basis to assist in the recruitment of new students.

3. Additional resources and opportunities could become available by strengthening the program's relationships with the various local, regional and national construction-related associations.

4. Increased use of the Institute for Construction Education and Training should be made for the purpose of creating additional partnerships with the construction industry to conduct continuing education courses, perform research and similar activities.

5. An excellent opportunity continues to exist for integration of theoretical course content with laboratory observations in existing facilities.

6. The development of a more active formal co-op program would enhance the program's credibility and provide an opportunity for structured work experiences for the program's students.

Ferris State University
College of Technology
Construction and Facilities Department

ACADEMIC PROGRAM REVIEW REPORT

ADDITIONAL INFORMATION

October, 1998

BCTM/CETM/CONM RETENTION ANALYSIS

Tracks Students Enrolled in CONM 111 Each Semester

As of November 2, 1998

All students entering CONM 111:	**Fall 1993-Winter 1994**		**Fall 1994-Winter 1995**		**Total**	
Earned AAS, left FSU:	13	14.8%	7	9.3%	20	12.3%
AAS, in BS, earned BS:	(10)		(12)		(22)	
No AAS, earned BS (0+4/transfer):	(16)		(8)		(24)	
Total students earning a BS:	26	29.5%	20	26.7%	46	28.2%
AAS, in BS, did not finish BS and left FSU:	1	1.1%	1	1.3%	2	1.2%
Currently enrolled in AAS:	0	0.0%	1	1.3%	1	0.6%
AAS, currently enrolled in BS:	2	2.3%	6	8.0%	8	4.9%
No AAS (0+4/transfer), currently enrolled in BS:	1	1.1%	3	4.0%	4	2.5%
Subtotal: Earned at least an AAS or currently enrolled:	**43**	**48.9%**	**38**	**50.7%**	**81**	**49.7%**
Pre-Tech, left FSU with no degree:	(24)		(19)		(43)	
Tech entry, left FSU with no degree:	(19)		(12)		(31)	
Total students that left FSU with no degree:	**43***	**48.9%**	**31***	**41.3%**	**74***	**45.4%**
Other (transfer to other FSU program):	**2**	**2.3%**	**6**	**8.0%**	**8**	**4.9%**
Total	88	100.0%	75	100.0%	163	100.0%
* Per cent that left FSU in first year	60%		52%		57%	
Pre-Tech students only:						
Pre-Tech, earned AAS:	(6)		(3)		(9)	
Pre-Tech, earned BS:	(5)		(3)		(8)	
Total Pre-techs with degrees:	11	30.5%	6	20.7%	17	26.2%
Pre-Techs currently enrolled in AAS:	0	0.0%	1	3.4%	1	1.5%
Pre-Techs currently enrolled in BS:	1	2.8%	3	10.3%	4	6.2%
Subtotal: Pre-Techs earned at least an AAS or currently enrolled:	**12**	**33.3%**	**10**	**34.5%**	**22**	**33.9%**
Pre-Tech, left FSU with no degree:	**24**	**66.7%**	**19**	**65.5%**	**43**	**66.1%**
Total Pre-Techs:	36	100.0%	29	100.0%	65	100.0%

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Enrollment Analysis

November 2, 1998

	Fall 1993	Graduates	Fall 1994	Graduates	Fall 1995	Graduates	Fall 1996	Graduates	Fall 1997	Graduates	Fall 1998
											49 Fr
									57 Fr		70 So
							38 Fr		51 So	13	51 Jr
					33 Fr		30 So	34	28 Jr		51 Sr
			27 Fr		43 So	24	39 Jr		41 Sr	25	
	50 Fr		56 So	30	32 Jr		52 Sr	33			
	39 So	25	32 Jr		46 Sr	26					
	39 Jr		41 Sr	25							
	39 Sr	37									
	0 TBD		21 TBD		26 TBD		20 TBD		20 TBD		0 TBD
Subtotal	167		177		180		179		197		221
Pre-Techs	29		27		24		45		39		40
GRATC	2	2	13	1	16	0	21	1	22	2	15
Total	198		217		220		245		258		276

Minor Capital Improvement Project Request FY '98

DEPARTMENT PRIORITY 2

SECTION A:

Project Description: Remodel CTC 107 classroom area, including work stations, cabinets, and classroom seating. See attached sheets.

College/Unit Priority X COLLEGE PRIORITY 3 4

College/Unit: Technology/Construction Technology and Management

Department/Area: Construction & Facilities

Rationale: Current facilities in poor repair. Seating not conducive to lecturing.

SECTION B:

Project Costing (Physical Plant)

Materials Cost: _____

Labor Cost: _____

Projected Completion Time: _____

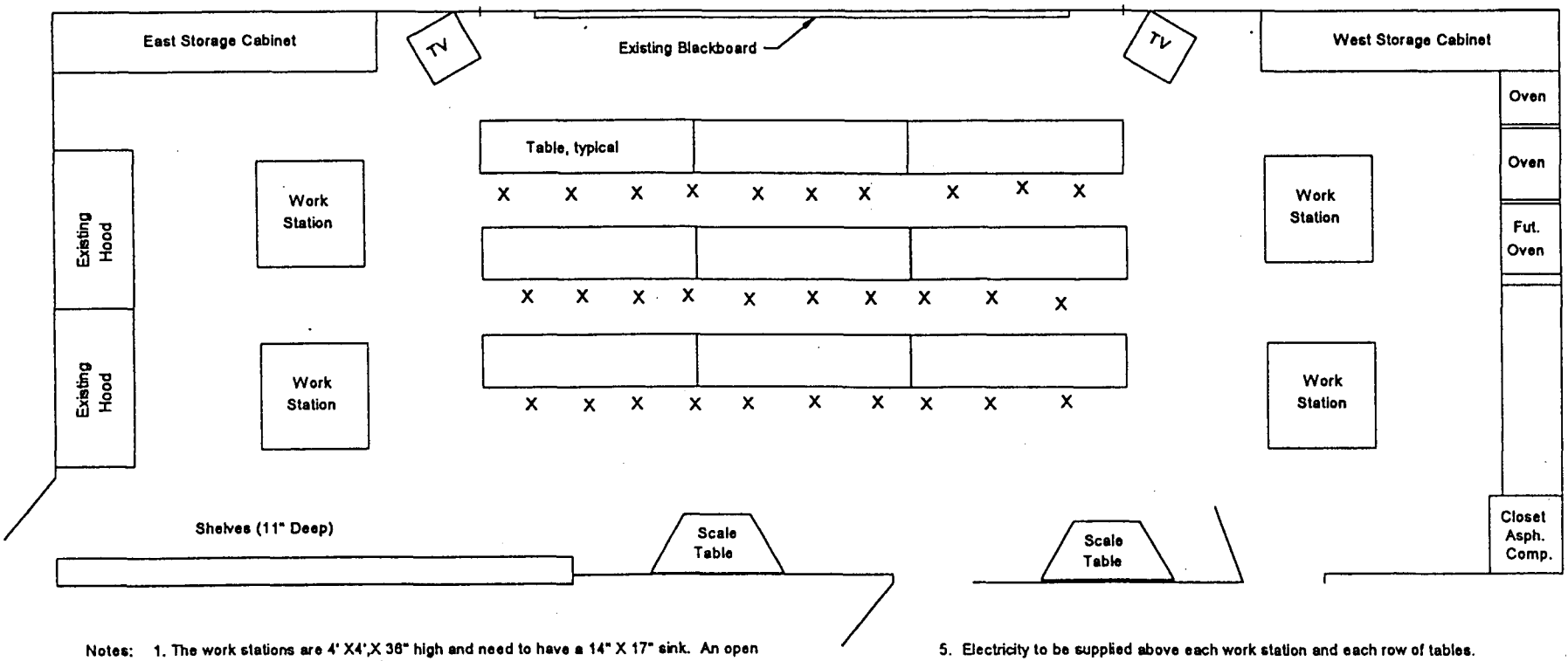
SECTION C:

Project Approval

Priority: _____

Approved: _____

$30k



Notes:
1. The work stations are 4' X4',X 36" high and need to have a 14" X 17" sink. An open tables with legs would be preferred.
2. The work stations should allow 4 students use stools to work on a project comfortably.
3. The tables are to be 24" X 96" and could fold to allow more chairs for student club meetings.
4. The tables should allow 10 student chairs (indicated by X) in the 24 feet of table space.
5. Electricity to be supplied above each work station and each row of tables.

CONSTRUCTION MANAGEMENT PROGRAMS						
BS CM and CM Certificates at GR ATC						
October 29, 1998						
BS CM			**Certificates**			
Name	Date		Name	Const Admin	Project Mgmt	Field Engring
Ridings	Spring 1993		Blauwkamp	Winter 1996	Winter 1997	
Puff	Summer 1993		Smith	Winter 1996	Winter 1997	Fall 1997
Fuller	Winter 1994		Velie	Winter 1996	Winter 1997	Winter 1998
Raehl	Fall 1994		Oberlander	Fall 1997	*	
Neubecker	Winter 1997		Peltier	Fall 1997	*	
Smith	Fall 1997		Reyers	Fall 1997		
Cammenga	Winter 1998		Sheldon	Fall 1997		
			Sleeper	Fall 1997	Fall 1997	Fall 1997
			Jackson	Winter 1998		
BS CM, Started in GR,			Machiela	Winter 1998	*	
Finished on Campus			Murphy	Winter 1998	*	
			Schaafsma	Winter 1998		
Dodson	Spring 1992		Jonckheere	Winter 1996	*	
Lindeboom	Summer 1994		Dougherty		*	
			* Expected Fall 1998			
Expected Degrees						
Blauwkamp	Fall 1998					
Bowen	Winter 1999					
Jonckheere	Fall 1999					
Sleeper	Fall 1999					

CONSTRUCTION TECHNOLOGY AND MANAGEMENT				
Faculty Loads (Credits/Contact Hours)				
	Fall	**Winter**	**Fall**	**Winter**
Name	**1997**	**1998**	**1998**	**1999****
Brayton	13/15	15/17*	13/16	15/18*
Eastley***	7/7	6/6	7/7	9/9
Hanna	11/13	13/17	14/16	13/17*
Moore	10/20*	9/19	10/20	11/17
Reinink	10/22*	8/16	12/24	8/16*
Schmidt	12/17	12/20	12/17	12/20
Seitter	10/15	10/17	11/18	10/17
Templin	15/18*	12/17	12/15	13/20
AVERAGE	**11.7/16.9**	**11.3/17.2**	**12.1/17.7**	**12.1/17.9**
NOTES:	* Overload			
	** Projected			
	*** 50% release time, Faculty Coordinator			
	Also see Section 11, page 11-2 of the			
	Academic Program Review Report			
	and detailed faculty schedules.			

CONSTRUCTION TECHNOLOGY AND MANAGEMENT						
Enrollment Data, BS CM and Certificates at GR ATC						
Goal, as stated in the Unit Action Plan since 1994-95: 12 students per course offered						
Course	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	
CONM 211	13		16			
CONM 212		7				
CONM 221	10					
CONM 222	13		15			
CONM 311		13				
CONM 312	12			13		
CONM 313			9			
CONM 321		15		12		
CONM 324			11	7		
CONM 412		13		18		
CONM 422					17	
CONM 451			9		13	
CONM 499			7			
AVERAGE	**12**	**12**	**11.2**	**12.5**	**15**	

Enrollment data for the BCT AAS, CET AAS, CM BS and the three programs combined is tabulated below. Detailed information on enrollment by class year is available at Appendix A.

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997	Fall 1998
On Campus:						
BCT AAS	80	67	55	39	43	50
CET AAS	27	23	18	14	13	11
CM BS	60	87	107	126	141	158
Sub-Total	167	177	180	179	197	219
Increase from Fall 1993:					18%	
Off Campus:						
CM BS, Certificates	2	13	16	21	22	17
Sub-Total	169	190	196	200	219	236
Increase from Fall 1993:					30%	
Pre-Tech	29	27	24	45	39	40
Total	198	217	~~224~~ 220	~~266~~ 245	258	276
Increase from Fall 1993:					30%	

The above enrollment trends should be reviewed in the context of overall Ferris State University enrollment, which declined 15% from Fall 1993 to Fall 1997. During the same period, overall College of Technology enrollment declined 2.2%. Reports for Fall 1998 indicate total university enrollment up 1.9% over 1997, with Construction Technology and Management programs enrollment up 7.0% over Fall 1997. Including Fall 1998, Construction Technology and Management programs enrollment is up 40% from Fall 1993.

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: CM BS

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE					
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	60	89	111	150	158
Freshman	7	16	29	36	34
Sophomore		14	12	10	32
Junior	14	21	24	29	34
Senior	39	36	42	51	41
Pre-Tech		2	4	24	17
Doctoral					
Enrollment off-campus*	2	13	16	21	22

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense					
Equipment					
Gifts & Grants					
Cash Donations					

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total	39	26	26	34	27
- On campus	37 ~~38~~	25	26	33 ~~32~~	~~27~~ 25
- Off campus	2 ~~1~~	1		1 ~~2~~	2
Placement of Graduates	100%	100%	100%	100%	100%
Average Salary	28,605	27,778	29,850	32,738	34,044
Productivity - Academic Year Average					
- Summer					
Summer Enrollment					

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: BCT AAS

Date Submitted: _____ Dean: _____

Please provide the following information:

	Fall 1993	Fall 1994	Fall 1995	Fall 1996	Fall 1997
Tenure Track FTE					
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	106	88	71	55	62
Freshman	34	20	24	18	20
Sophomore	27	36	23	13	18
Junior	17	6	7	7	5
Senior	2	5	1	1	
Pre-Tech	26	21	16	16	19
Doctoral					
Enrollment off-campus*					

Note: Tenure-track FTE does not include .5 FTE coordinator release time.

Financial

Expenditures*	FY 94	FY 95	FY 96	FY 97	FY 98
Supply & Expense					
Equipment					
Gifts & Grants					
Cash Donations					

Other

	AY 93/94	AY 94/95	AY 95/96	AY 96/97	AY 97/98
Number of Graduates* - Total	18	24 ~~25~~	18	22	9
- On campus	18	24 ~~23~~	18	22	9
- Off campus					
Placement of Graduates	100%	100%	100%	100%	100%
Average Salary					
Productivity - Academic Year Average					
- Summer					
Summer Enrollment					