American Council for Construction Education

Volume I

SELF-EVALUATION STUDY

Mag Malek, Ph.D.
Department of Construction Management
College of Computing, Engineering, and Construction
University of North Florida
mmalek@unf.edu

September 14, 2010
TABLE OF CONTENTS

Volume I

I. Introduction
   A. Accreditation
   B. Institution
   C. Construction Unit

II. Organization and Administration
   A. Organization Charts
   B. Construction Unit Administration
   C. Related Programs
   D. Construction Unit Budget
   E. Comparable Program Budgets

III. Curriculum
   A. Program Description
   B. Institutional Requirements
   C. Plan of Study
   D. Degree Requirements-Four Year Baccalaureate
   E. Required Curriculum Categories, Core Subject Matter, Curriculum Topical Content
   F. Degree Requirements-Two-Year Associate Degree Program
   G. Required Curriculum Categories, Core Subject Matter, Curriculum Topical Content
   H. Course Sequencing
   I. Course Descriptions
   J. Course Offerings
   K. Supporting Disciplines

IV. Faculty
   A. Current Staff
   B. Staff Assignment Definitions
   C. Current Faculty Assignments
   D. Compensation
   E. Evaluation and Promotion Policies
   F. Professional Development

V. Students
   A. Admission Standards and Procedures
   B. Quality of New Students
   C. Enrollment Data
   D. Grading System
   E. Academic Success and Failure
   F. Record Keeping
# TABLE OF CONTENTS

## Volume I

G. Academic Advising  
H. Student Activities  
I. Graduates and Placement Office  
J. Other

### VI. Facilities and Services

A. Laboratories  
B. Classrooms  
C. Staff Offices  
D. Library  
E. Audiovisual Services  
F. Computer Facilities  
G. Placement Services

### VII. Relations with Industry

A. Advisory Committee  
B. Contributions  
C. Seminars and Short Courses  
D. Research  
E. Work Experience Programs  
F. Placement Assistance  
G. Student–Industry Interaction

### VIII. Published Information to the Public

A. Selected Materials  
B. Method of Material Selection  
C. Methods of Distributing

### IX. General Analysis

A. Program Quality Assessment  
B. Future Plans  
C. Actions to Address Prior Cited Weaknesses  
D. Public Accountability  
E. Program Quality  
F. Outcome Assessment Results
Construction Management

University of North Florida

SELF-EVALUATION STUDY

Submitted by: Dr. Mag Malek, Construction Management Chair

Name of Institution: University of North Florida

Title of Construction Program: Construction Management

I. INTRODUCTION

A. Accreditation

1. Name of regional organization by which the institution is accredited.

The University of North Florida (UNF) is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award the baccalaureate, masters, and doctorate degrees.

2. Is the construction program or a portion thereof, accredited by another accrediting agency?

No, the UNF Construction Management academic program is not accredited in part or whole by another accrediting agency.

3. List accrediting agencies that currently accredit programs at the institution.

ABET Computing Accreditation Commission
ABET Engineering Accreditation Commission
American Chemical Society
American Council for Construction Education
American Association of Nurse Anesthetists
Association for University Programs in Health Administration
Commission on Accreditation of Allied Health Education Programs
Commission on Accreditation for Dietetics Education
Commission on Accreditation of Healthcare Management Education
Commission on Accreditation in Physical Therapy Education
Commission on Collegiate Nursing Education
Council for Accreditation of Counseling and Related Educational Programs
Council on Education of the Deaf
Council on Rehabilitation Education
Florida Board of Nursing
Florida Department of Education
National Association of Schools of Music
National Association of Schools of Public Affairs and Administration
National Council for Accreditation of Teacher Education
National League for Nursing Accrediting Commission
The Association to Advance Collegiate Schools of Business

B. Institution

Provide background information about the institution. Describe its history, mission, size, purpose, and organizational structure in general terms.

UNF History
The University of North Florida (UNF) celebrated its 37th anniversary in 2009, capping more than thirty years of strong growth and academic excellence. The University was chartered by the state in 1965 and began recruitment of faculty and staff in 1970. The doors opened to a 2,000-member junior and senior student body in 1972. In 1984, UNF admitted the first freshmen class, followed by sophomores in 1985. By the fall of 2009, the student body had grown to more than 15,000 students, enrolled in ~50 undergraduate, ~25 graduate, and three doctoral degree programs. Over sixty percent of the students come from the five county area of Northeast Florida. Students have come from all 50 states and from over 100 foreign countries.

UNF Mission
The University of North Florida fosters the intellectual and cultural growth and civic awareness of its students, preparing them to make significant contributions to their communities in the region and beyond. At UNF, students and faculty engage together and individually in the discovery and application of knowledge. UNF faculty and staff maintain an unreserved commitment to student success within a diverse, supportive campus environment.

UNF Size
The University’s excellent academic reputation has been recognized nationally. UNF’s faculty has grown from 177 in 1972 to more than 580 full time members today teaching in five colleges. UNF enrolls over 16,700 students and has a budget that exceeds $175 million annually. Annual research is currently approximately $15 million.

The physical plant also has expanded dramatically since 1972 when the campus consisted of a core of a half dozen buildings. Today the campus encompasses ~230 major buildings with approximately four million square feet of space. The Science and Engineering building was occupied in first quarter 2004 and houses Physics, Chemistry, Engineering and the Department of Construction Management.

UNF Purpose
The University of North Florida (UNF) is one of eleven publicly assisted institutions in Florida. Located in Jacksonville, this comprehensive urban university primarily serves Florida residents, especially those of the State’s northeastern region.

The University of North Florida aspires to be a preeminent public institution of higher learning that will serve the North Florida region at a level of national quality. The institution of choice for
a diverse and talented student body, UNF will provide distinctive programs in the arts and sciences and professional fields. UNF faculty will excel in teaching and scholarship, sharing with students their passion for discovery. Students, faculty, staff, alumni, and visitors will enjoy a campus noteworthy for its communal spirit, cultural richness, and environmental beauty.

**UNF Organizational Structure**
The University is organized into four line-operating divisions, each of which is led by a Vice President that reports to the President. The operating divisions are Academic Affairs, Student Affairs and International Relationships, Administration and Finance, and Institutional Advancement. Educational programs are delivered by five colleges, Arts and Sciences, Business, Education and Human Services, Health, and Computing, Engineering, and Construction. All colleges report to the Vice President for Academic Affairs.

http://www.unf.edu/uploadedFiles/president/hr/OrgChart.pdf
C. Construction Unit

I. Provide background information about the construction program, i.e., describe its origins, developmental history, mission, goals, and current size and organizational structure.

CM Origins
When the University of North Florida (UNF) was founded, a Division of Technology was initiated. The Division of Technology offered a core curriculum along with tracks in construction, manufacturing, fire science and electronics. Ultimately, the construction technology program evolved into the Department of Construction Management.

CM Developmental History
The university underwent a restructuring of its academic programs in 1987, and subsequently, the Division of Technology was phased out. The construction track was retained as a program and placed into the College of Education and Human Services. In 1994, the Building Construction Management degree was modified from a baccalaureate in technology to a baccalaureate of science in technology.

In 1995, the State of Florida mandated that all state universities develop common prerequisites. UNF, along with the University of Florida and Florida International University, designed a similar construction management curriculum. In 1996, the UNF degree was changed to the baccalaureate in building construction with a concentration in building construction management. Concurrently, the Building Construction Management program was moved to the College of Computing and Information Sciences and Engineering.

In 2000, UNF’s request to elevate the Building Construction Management program to departmental status was granted by the Florida Board of Regents. In 2004, the College changed its name to the College of Computing, Engineering, and Construction to recognize the departmental status of the Building Construction Management program and the addition of Mechanical Engineering and Civil Engineering academic programs. In 2007, the name of the Department was changed to the Department of Construction Management.

CM Mission
The mission of the Department of Construction Management is to educate and develop construction professionals with a global perspective through a rigorous, relevant, and accredited degree program offered by faculty devoted to excellence in teaching, scholarly activities, service projects, community involvement and ethical standards. Students will experience an active working relationship with local industry and develop a global perspective through cooperative efforts and exchange programs with international universities and colleges in the framework of a culture of ethics, which are vital in the development of successful construction professionals and provides distinct characteristics for our graduates’ pursuit of career development and professional opportunities.
CM Goals
1. The Department will develop a cooperative agreement with international universities serving our Construction Management graduates, and maintain a high quality Bachelor of Science program in Building Construction that will enable graduates to achieve their maximum potential in the building construction field. The Department will broaden our graduates’ horizons through local community based learning service projects and through international study abroad classes.

2. The Department will focus its resources on the continuing development of a construction management program of the highest quality in keeping with the needs of our dynamic industry.

3. The Department will offer degree programs that have relevance to the needs of the community in areas such as life-long learning, ethics, and professional development.

4. The Department will maintain an active presence through its partnerships in the northeast Florida community and surrounding region.

5. The Department will recruit and retain exceptional faculty and staff to ensure quality academic programs.

CM Current Size
The Department has 264 CM students in fall 2010. During the ACCE accreditation review in spring 2000, the CM Department had ~ 90 CM students in Upper Division. Thus, the CM Department has experienced an overall growth of 293% in student enrollment in the last ten years. In addition, the CM Department currently has six faculty members, an instructor/advisor member, two office staff and a number of adjunct instructors.

CM Organizational Structure
The Department of Construction Management (CM) has a full time Chair that reports to the Dean of the College of Computing, Engineering and Construction. Besides the faculty, the Chair is supported by one full-time and two part-time student office personnel.

The Dean’s Office has three technical support members that maintain the College computing environment. The Dean’s Office also has an administrative staff that provides assistance with financial tracking and other administrative tasks. The CM Department is supported as necessary by this team.

Near Term Objectives
- Successful 2011 accreditation review by the American Council for Construction Education.
- Continue to hire permanent faculty to meet the teaching load as determined by the university.
- Continue to create Transformational Learning Opportunities for students in such areas as community service, Internship, study abroad, and research.
- Create diversified global opportunities for graduate studies serving our Construction Management graduates.
- Enhance research and scholarly work through development of an Infrastructure Research Center and the development of an eJournal to facilitate the publication of scholarly work.

**Long Term Objectives**
- Initiate space planning for a new CM facility.
- Maintain a viable relationship with the construction industry through the Dean’s Advisory Council, the Department’s Construction Management Advisory Council.
- Continue to meet ACCE accreditation standards.
- Explore new dimensions for the department and academic program such as research, distance learning, and a masters program.
- Initiate an MS International Construction Management program via Distance Learning.
- Become the School of Construction Management.

**CM Program Goal 1**
1. The Department will develop a cooperative agreement with international universities serving our Construction Management graduates, and maintain a high quality Bachelor of Science program in Building Construction that will enable graduates to achieve their maximum potential in the building construction field. The Department will broaden our graduates’ horizons through local community based learning service projects and through international study abroad classes.

**Action 1:** The CM Department has developed and maintains a qualified degree program in Building Construction based on program-specific national accreditation criteria and the Department’s Academic Learning Compact. All topical content required by ACCE is covered in the curriculum. New community Based Learning (CBL) and Transformational Learning Opportunities (TLO) were developed for projects in the community, which allow students to participate and acquire hands-on experience.

**Outcome:** The Bachelor of Science in Building Construction will maintain its accreditation and will instill in the graduates hands-on experience.

**Evaluation:** The Bachelor of Science in Building Construction is presently accredited by the American Council for Construction Education (ACCE) and all concerns, weaknesses or deficiencies noted were addressed, rectified and approved by ACCE. Feedback from industry on CBL projects involving our students indicates a high degree of appreciation for the students’ performance.

**Continuous Improvement:** The CM Department has a program of self-assessment and continuous improvement. In addition, the CM Department has initiated a self-evaluation study in preparation for the next ACCE accreditation review in 2011. An ACCE Consultant, Dr. Roger Liska, was retained to address the continuous improvement plan and review the Department’s Self Study.

**Action 2:** The CM Department developed and maintains graduate programs in cooperation with the UNF Coggin College of Business and international universities. These programs will be based on the undergraduate and graduate programs in Construction Management. Two new
agreements were ratified with the EPF Graduate School of Engineering, Paris, France (EPF) and the American University of Cairo, Egypt (AUC).

**Outcome:** The CM Department will serve northeast Florida, the State of Florida and the nation by providing appropriate graduate education.

**Evaluation:** The CM Department, in partnership with the UNF Coggin College of Business, now offers an MBA with a Construction Management concentration. The CM Department also developed exchange and graduate programs in partnership with EPF Graduate School of Engineering, Paris, France (EPF) and the American University of Cairo, Egypt (AUC), which is ABET accredited. Several of our CM graduates pursued their studies and obtained an MBA with a concentration in construction that allowed them a successful career in the industry and others are teaching as adjuncts.

**Continuous Improvement:** The CM Department continues to interact with employers on developing a Master of Science degree in Construction Management.

**CM Program Goal 2**

2. The Department will focus its resources on the continuing development of a construction management program of the highest quality in keeping with the needs of our dynamic industry.

**Action 1:** The CM Department will recruit outstanding students and provide comprehensive student advising. An articulation agreement was initiated with Sante Fe Community College, Gainesville, FL, to recruit outstanding students to the CM program.

**Outcome:** Students new to the Construction Management program will be prepared to excel in the academic program.

**Evaluation:** Following an era of substantial increases in the number of students who wish to enroll in the Construction Management program, the Department focused on recruiting only the best quality of students and established new admission criteria for transfer students. Based on the industry surveys, the quality of our CM graduates is satisfactory and exceeds the industry requirements.

**Continuous Improvement:** The CM Department added a full time Instructor/Advisor to ensure students receive comprehensive advising on their academic program.

**Action 2:** The CM Department will expand on its distance learning initiatives using the most current technology in the field in implementing graduate and undergraduate classes in the context of the existing ratified agreements with international universities.

**Outcome:** Construction professionals and working students with time constraints can more easily pursue their educational objectives.
Evaluation: The CM Department has been consistently offering courses through distance learning and has helped accommodate those working in the industry while pursuing their academic education.

Continuous Improvement: The CM Department distance learning courses are very popular and usually filled to capacity. The department is exploring methods to expand its offerings in distance learning to implement graduate programs.

CM Program Goal 3
3. The Department will offer degree programs that have relevance to the needs of the community in areas such as life-long learning, ethics, and professional development.

Action 1: The CM Department will prepare its graduates for immediate entry into the construction profession or for graduate education through the development of CBL experiences, instilling ethical criteria in performing every trade related to the project at hand.

Outcome: The Construction Management students will compete favorably with students from other institutions in securing internships and permanent employment.

Evaluation: Internship placement and employment data is solicited from students, graduated students and employers. The internship class is consistently filled to capacity in spite of the economic downturn and internship surveys show a high level of satisfaction.

Continuous Improvement: Internship employers provide feedback on student job performance. Alumni are periodically solicited on their views of the program and their career. The information is used to evaluate the academic program. These data and documents are gathered in Volume II Appendix C, and their results are referred to in Volume I, Section IX in the Continuous Improvement Model (Closing the Loop) section.

Action 2: The CM Department will prepare students to appreciate the importance of continuing education and professional certifications. The CM graduates are required in their Capstone class to sit for the American Institute of Constructors Associate Constructors (AC) or Certified Professional Constructor (CPC) exam, and are encouraged to sit for the General Contractors exam, and the LEED Certification exam.

Outcome: The CM Department emphasizes the importance of life-long learning and professional certifications after graduation.

Evaluation: The CM department offers the 10 Hour Occupational Safety and Health Training Course in Construction Safety and Health as part of the curriculum. All students taking the OSHA safety course passed and received the OSHA certificate of completion. The students’ score on the Associate Constructor (AC) exam counts as 20% of the Capstone course final grade.

Continuous Improvement: The CM Department utilizes the Graduating Senior Survey, the Alumni Survey, as well as the results from the newly implemented requirement of the American Institute of Constructors Associate Constructor (AC) or Certified Professional Constructor
(CPC) exam to obtain feedback from former students on their professional certifications. This data is in Volume II, Appendix C.

**CM Program Goal 4**

4. The Department will maintain an active presence through its partnerships in the northeast Florida community and surrounding region.

*Action 1:* The CM Department will focus its resources on initiatives designed to meet student and community needs.

*Outcome:* The Construction Management students will be able to experience Transformational Learning Opportunities and participate in Community Based Learning projects.

*Evaluation:* The outcome assessment tools used referred to in Vol. I, Section IX and Vol. II indicate improvement in preparing our students to penetrate the construction workforce successfully.

*Continuous Improvement:* Students complete various surveys on their experiences. Internship employers provide feedback on student job performance. The information is tallied, analyzed, and discussed by faculty to make enhancements, whenever necessary, to the academic program through a University wide process, the Academic Programs Committee (APC). Changes were made in the curriculum following a faculty discussion of the results and a faculty vote to implement changes.

*Action 2:* The CM Department provides opportunities for construction industry donors to contribute resources for the enhancement of the academic program.

*Outcome:* Construction industry donors receive recognition for their financial gifts.

*Evaluation:* State monetary support essentially does not provide funding for activities beyond the classroom. Recently, the construction industry has made substantial contributions to the academic program. This has enabled the CM Department to offer experiences beyond the classroom. For example, these funds are used to help defray student expenses on the Study Abroad courses and competitions. Over the course of four years, the monetary funding from industry to the department increased from $60,000 to $169,000. Additionally, industry-donated scholarship funds to the CM Department equaled approximately $15,000 per year.

*Continuous Improvement:* The CM Department will continue to seek additional funds to support student activities beyond the classroom using new research initiatives and new scholarly work involving CM students and graduates to simultaneously raise the academic bar and improve the funding opportunities. As a result of industry monetary funding, the CM Department has initiated the Center for Infrastructure Research as well as the development of the UNF CM Container Project in conjunction with Jaxport and Horizon Lines.
CM Program Goal 5
5. The Department will recruit and retain exceptional faculty and staff to ensure quality academic programs.

Actions 1: The CM Department will periodically recruit for the best personnel available.
Outcome: Construction Management faculty and staff will be paid competitive wages and will have a pleasant working environment.

Evaluation: The Department successfully recruited new permanent faculty members. The CM Department expects to hire additional faculty in the coming year as soon as a new line is given to the College.

Continuous Improvement: The calculated teaching load for the CM Department shows that one additional permanent faculty member is required to conform to the university’s goal of maintaining small to medium class sizes. The Department’s policy is to maintain a cap of 40 or fewer students per class on most of the Construction Science and Construction classes. A smaller number of students is applicable to specific classes requiring hands on activities and laboratory work. The teaching needs continue to be presented to the administration.

CM Assessment and Achievement of Program Goals
The CM Department has established a systematic process of self-assessment and continuous improvement. This is performed on an annual basis as a means to assess how well the program is doing in meeting its program goals and how the CM students are meeting the expected Educational Outcomes. Survey instruments used in the assessment process and how achievement is measured on goals and outcomes are shown in Volume I, Section IX, and in Volume II, Appendix C.
Section II
II. ORGANIZATION AND ADMINISTRATION

A. Organizational Charts

1. Provide organizational charts for the institution, which describe the place of the construction unit within the institution's administrative structure.

2. Indicate the names of incumbents in positions directly related to the construction unit.

Mr. John A. Delaney, J.D., President
Dr. Mark Workman, Provost and Vice President for Academic Affairs
Dr. Peter Braza, Dean, College of Computing, Engineering, and Construction
Dr. Mag Malek, Chair, Construction Management

B. Construction Unit Administration

1. Administrator of the construction unit:

Name of incumbent: Mag Malek, Ph.D.
Title: Associate Professor and Chair, Department of Construction Management

Describe the administrative procedures of the construction unit and, if pertinent, the next higher administrative unit with regard to:

a. Curriculum: Development of curriculum objectives; development, implementation and revision of the curriculum; selection of courses to be offered.

The General Education Council, in cooperation with the Vice President of Academic Affairs and the State of Florida established the General Education (freshmen and sophomore) requirements for the University. The CM Department established the required lower division pre-professional
courses taught in the General Education Program. Likewise, in accord with ACCE curriculum requirements, the CM Department defined the courses to be offered in Upper Division (juniors and seniors). In addition to the CM Department annual self-assessment activity, there is interaction with the members of the construction industry to ensure that the curriculum encompasses current industry trends.

The faculty and staff of the Department participate in an annual self-assessment of the CM program and curriculum. Revisions of the curriculum are approved by majority vote of the CM faculty. Approved changes are presented to the College Curriculum Committee for review and approval. Approved changes from the College are then submitted to the UNF Faculty Association for review and approval. University approved changes are then submitted to the Florida Board of Governors for review.

The specific course content of a particular CM course is the responsibility of the faculty member teaching the course. Overall guidance of the curriculum is provided by the CM Curriculum Committee of which all CM faculty are members.

b. Faculty: Recruitment and hiring; assignment of teaching loads.

Faculty lines are allocated to a program based on demonstrated teaching loads in the Department as measured by “Full Time Equivalent (FTE)” (1 faculty FTE for a semester = 15 Student Semester Hours (SSH) X 15 students or 225 SSH; for an academic year 1 faculty FTE = 450 SSH). For example, the university calculation for the required number of faculty to match the fall 2009 teaching load is ~7. The number of permanent faculty in the Department in fall 2009 is 7. Thus, the university views the department as having sufficient faculty members to meet the teaching load.

The recruitment and search process for a faculty member for an authorized line is facilitated by a Search Committee. The criteria for the position are developed within the CM department among the faculty and Chair. Upon approval by the Dean and University Provost, the position is advertised to ensure a diverse candidate pool. An advertisement is placed in a number of venues including the Associated Schools of Construction (ASC) web site, the university web site and a higher education publication. The Search Committee narrows the field to 3-4 candidates who are invited to campus. The Search Committee then recommends viable candidates to the Chair. In consultation with the Dean, the selected faculty member is given an employment offer. The Search Committee is comprised of CM faculty, CM student(s), construction industry representative (s), and possibly others.

The assignment of teaching loads is determined by the Chair in accord with University and College policies. The University specifies a full time academic workload to be 12 equivalent credit hours in fall and spring. The CM teaching loads are typically three courses for 9 credit hours. The remaining 3 credit hours are assigned to scholarly works, research and service. Funds permitting, CM faculty members are typically assigned one to two courses or 6 credit hours in the summer. When possible, teaching assignments are made per a faculty member’s preference.
c. Facilities: Assignment of rooms; class size limits; management of assigned space.

Assignment of classrooms is facilitated by the University, based on class size and technology needs. The Department submits a request that specifies courses, days and times. In the case of a classroom with special needs such as computing capability or laboratory, the Department so advises the University and it is assigned accordingly.

As in the case of the University, CM enrollments are increasing. Today, the class size objective is 30 students per course. However, due to student demand, it may be necessary to increase the class size in order to accommodate the students. Given the course production capability of the Department, each course is offered at least once in the academic year and in a particular rotation per the course pre-requisites. Students must take the courses as offered or face missing the course rotation and extending their stay at the University.

The Department is responsible for managing its space as allocated by the College.

d. Budget: Allocation of funds; determination of salaries; control of expenditures.

The Department submits a budget request to the Dean in the spring. The Dean presents the request to the Provost for the College. Depending on funds released from the State, the Provost releases funds to the Dean who in turn assigns them to the departments. These annual funds cover items such as Operating Expense (OE), Other Capital Outlay (OCO), and Other Personnel Services (OPS).

Expenses associated with faculty and staff labor and burden are funded separately via the authorized lines and their associated rates. This is determined in the hiring process. Annual increases are specified by the State. On rare occasions, some additional “merit” funds are released. This is typically a nominal amount and normally distributed among faculty in the unit.

Control of Operating Expense funds is the responsibility of the Chair. The Chair receives assistance from the Department Office Manager and the Dean’s Fiscal Officer in tracking expenses.

In addition to the university annual budget process, the Department has a Foundation account. These funds typically are donations from the construction industry. The CM Chair, in consultation with the CM faculty, is responsible for the administration of these funds. An example expense from this account would be funds used to support CM student design competitions.

Finally, the College has a New Building Account whereby academic units housed in Building 50, the Science and Engineering Building, may request funds that enhance the infrastructure. For example, the CM Department recently requested the installation of a drop ceiling in the CM student lounge to enhance the acoustics of the room. This has been accomplished.
e. **Evaluation:** **Evaluation of program effectiveness.**

Evaluation of the CM program effectiveness is performed on an annual basis. The evaluation process is described in item 2, Administrative Procedure, and in detail in Section IX, General Analysis, A. Program Quality Assessment. The specific program survey instruments used in the assessment quality plan in terms of inputs and outputs in program delivery, teaching, research and service are shown in Volume II Self Evaluation, C Surveys.

2. **Describe the administrative procedure of the construction unit with regard to how the administration and faculty periodically review operations and curriculum offerings for improvement opportunities through sound experimentation and innovation.**

An annual assessment of the CM program and curriculum is conducted by the CM faculty. The ACCE accreditation requirements for the curriculum categories are noted. The current CM curriculum is mapped against the current ACCE curriculum category requirements. Survey comments from various sources including the faculty, adjuncts, graduating senior surveys, surveys of the construction industry, etc. are also considered. The assessment is designed to generate discussion among the faculty, adjuncts, advisor, staff and administration associated with the CM program to consider possible changes in the CM program such as curriculum, facilities, advising, student activities, etc. For example, in spring 2009, the CM faculty conducted a formal comprehensive review of the CM curriculum. The overall CM assessment process is shown in the University of North Florida Continuous Improvement Model in Section II and Section IX.

The CM faculty votes on suggested program and curriculum changes. Approved changes require a majority vote of the CM faculty for a change to be submitted to the College Curriculum Committee and the UNF Faculty Association. Approved proposed change processing follows the university calendar. For the CM program per the UNF calendar:

1. Discussions are held during the summer and early fall among the faculty on the CM program using various feedback mechanisms such as the Graduating Senior Surveys.
2. CM faculty vote on proposed changes during August.
3. APC forms are prepared requesting the departmental approved curriculum changes.
4. The college curriculum committee meets in September to review and approve all proposed curriculum changes in the college.
5. Changes approved by both the department and the college are submitted to the Faculty Association in September.
6. Approved program changes are also reviewed by the Provost Office.
7. CM program and curriculum approved changes are implemented in the following fall.

The specific program surveys used in the academic assessment quality plan in terms of inputs and outputs and how they are used to assess program delivery, teaching, research and service are shown in Volume II, Appendix C.
University of North Florida Continuous Improvement Model

1. Develop learning objectives.
2. Check for alignment between curriculum and the objectives.
3. Develop an assessment plan.
4. Collect assessment data.
5. Use results to improve the program.
6. Routinely examine the assessment process and correct as needed.
C. Related Programs

1. Describe intra-campus and multi-campus relationships with allied disciplines.

Relationships with others include:
- The CM Department developed exchange and graduate programs in partnership with EPF Graduate School of Engineering, Paris, France (EPF) and the American University of Cairo, Egypt (AUC), which is ABET accredited.
- The CM program utilizes a number of business courses from the Coggin College of Business as part of the CM BS degree requirements. Likewise, the College of Arts and Sciences provides a number of required CM courses such as physics.
- The CM Department participates with the Coggin College of Business on an MBA Construction Management degree program.
- The CM Advisor maintains a liaison relationship with community colleges in the region such as Florida State College at Jacksonville and St. Johns River Community College. In addition, high schools in the region are visited periodically.
- The College has a 3/2 program with Bethune-Cookman University. The College seeks minority students for Engineering and Construction Management.
- CM faculty members participate on various University and College committees.

2. Describe provisions that have been established for interfacing with related programs and for the interaction of the faculty with those in other disciplines.

CM interacts primarily with Civil Engineering. In particular, Dr. Mag Malek has been working with Civil Engineering faculty on sharing laboratory facilities and equipment for the W.G. Pitts Building Construction Materials Laboratory.

On occasion, CM faculty will serve on College faculty search committees for other disciplines such as mechanical and civil engineering. In addition, Dr. J. David Lambert interacts with other UNF faculty such as Civil Engineering through research activities. He is also a Board Member of the UNF Environmental Center.
D. Construction Unit Budget

1. Indicate the approximate amount and percentage of the sources of recurring operating revenue for the construction unit for the prior fiscal year.

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/Staff Salaries &amp; Benefits, (incl. summer)</td>
<td>$483,233.00</td>
<td>83.3</td>
</tr>
<tr>
<td>Institutional Funds</td>
<td>$16,555.00</td>
<td>2.9</td>
</tr>
<tr>
<td>Adjunct Faculty Salaries &amp; Benefits</td>
<td>$40,568.00</td>
<td>6.9</td>
</tr>
<tr>
<td>Faculty Travel</td>
<td>$9,000.00</td>
<td>1.6</td>
</tr>
<tr>
<td>Foundation Accounts</td>
<td>$23,050.00</td>
<td>4.0</td>
</tr>
<tr>
<td>Miscellaneous Fund</td>
<td>$7,710.00</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total Operating Revenue</strong></td>
<td><strong>$580,116.00</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

1 This is not a revenue account. Budget posted by the university each year.
2 Operating expense budget. This is not a revenue account. Budget posted by the university each year. Increasing to $36,853 this year (2010-2011) (This includes $'s for new equipment purchases).
3 This is not a revenue account. Budget posted by university each year. Includes Summer.
4 Faculty travel. This is not a revenue account. Budget posted by the university.
5 CM discretionary foundation account, Centex foundation account, CM Student Initiatives account
6 Indirect funds earned from grants(CM Indirect 250221); CCEC Events Fund (This is a college level account; budget/revenue at the college level)

2. Indicate the approximate amount and percentage of the expenditures for the construction unit for the prior fiscal year.

<table>
<thead>
<tr>
<th>Type of Expenditure</th>
<th>Amount ($)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Salaries</td>
<td>$273,815.00</td>
<td>47.1</td>
</tr>
<tr>
<td>Other Salaries and Wages</td>
<td>$267,554.00</td>
<td>46.0</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>$16,358.00</td>
<td>2.8</td>
</tr>
<tr>
<td>Faculty Travel</td>
<td>$8,954.00</td>
<td>1.5</td>
</tr>
<tr>
<td>Foundation</td>
<td>$37,691.00</td>
<td>1.1</td>
</tr>
<tr>
<td>Miscellaneous Fund</td>
<td>$8,260.00</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>$612,632.00</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

1 Two 12 month faculty; Five 9 month faculty; salary only/benefits not included
2 USPS 12 month salary/benefits not included; Faculty and USPS benefits for 2009-2010; Community Relations Coordinator salary (pd from foundation funds-0338 acct); Adjuncts: Summer 2009, Fall 2009, Spring 2010, Summer 2010;benefits included; Faculty Summer Salaries (Summer School 1 (2009)/benefits included; Summer School 2 (2010)/benefits included).
3 Operating expenses for FY 2009-2010
4 Travel allocation from academic affairs; additional travel for Malek and Sorce on Canada & Egypt TLO, pd by student funding in TLO. No data.
5 Indirect funds earned from grants; CMs portion of expenditure from the CCEC Events Fund.

3. Describe the nature of, the approximate amount, and the use of nonrecurring funds for the preceding year.

The CM Department does not receive funds from the State to support student activities. The construction industry has been very generous in their support of CM student functions. For
example, CM received $23,050 construction industry contributions in 2009/10 (Fig. 1 – Foundation). Construction industry contributions for student activities last year included student design competitions, banquet and study abroad support. The department spent approximately $15,000 on these student activities each year.

The CM department is housed in the new Science & Engineering building. The Department receives funds from the Building Fund to enhance its infrastructure. For example, a laboratory space was recently remodeled into a CM student lounge and lecture area at a cost of approximately $22,000.

Florida Rock Inc. ($105,567) and W.G. Pitts Inc. ($57,665) made financial contributions, matched by the State of Florida, for two new laboratories utilized by the Department:

- Florida Rock Construction Computing Laboratory
- W.G. Pitts Building Construction Materials Laboratory

4. Indicate how the budget is sufficient to enable the program to realize its mission and goals.

UNF has made and continues to make substantial investment in the CM academic program. In spring 2009, the state provided the University with approximately $5,000 per faculty member. In comparison, the School of Engineering and the School of Computing each had an average annual funding of approximately $10,000 per faculty member. The Department of Construction Management has been able to supplement its state provided funds through contributions from the construction industry. The state funds to CM in 2009/10 for operating expense were $16,555.00 or ~$3,000 per faculty member. The CM department has entered into multi-year agreements with various construction firms to provide an annual payment to the department of either $3,000 or $5,000 per year for three years. However, the department does not currently have an endorsement from industry that provides recurring funds. Thus, the funds to the CM Department for operating expense are ~$4,000 per faculty member, which is more than adequate. The state funds of $16,555.00 were sufficient to operate the Department. The additional funds from industry allow the Department to support activities such as additional faculty travel, funds for student design competitions and student support for study abroad.

Indicators of success are the construction industry surveys, which reflect a positive view of the CM program. Likewise, student enrollments are increasing. The CM goals, updated in 2007, are part of the assessment process. The mission statement was also revised in 2008 to include the self-assessment and continuous improvement program and again in 2010.

E. Comparable Program Budgets

Institutional support by the administration of the construction unit should accord status within the institution comparable to that of other academic units of similar size and function with regard to finances. Indicate the amount and percentage of operating revenue and expenditures for units on the campus that are comparable to the construction unit.
UNF is a member of the State University System of Florida. Operating funds are provided by the State. UNF receives “state assisted funding” for operations. It is the responsibility of each academic unit to secure additional funds as necessary for activities over and above the basics. For example, in the case of the CM program, the construction industry has been providing funding for activities such as the annual NAHB student design competition.

The College is composed of three academic areas; the School of Computing (SoC), the School of Engineering (SoE), and the Department of Construction Management. There are no comparable academic units to compare within the College. For the purpose of this self-study, a comparison will be made to the Civil Engineering (CE) program. To obtain figures for the Civil Engineering program, we divided the numbers for the School of Engineering by three since the SoE budget is not categorized by the smaller units in the program.

The following is the 2009/2010 student enrollment, number of faculty and budget distribution for the Department of Construction Management (CM) program and the Civil Engineering (CE) program in the College of Computing, Engineering, and Construction (CCEC):

<table>
<thead>
<tr>
<th></th>
<th>Construction Management</th>
<th>Civil Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS Students</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>BS Students</td>
<td>279</td>
<td>156</td>
</tr>
<tr>
<td>Faculty</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Faculty/Staff Salaries &amp; Benefits¹</td>
<td>$483,233.00</td>
<td>$689,428.00</td>
</tr>
<tr>
<td>Institutional Funds¹</td>
<td>$16,555.00 (²)</td>
<td>$51,523.00</td>
</tr>
<tr>
<td>Faculty Travel¹</td>
<td>$9,000.00</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Foundation Accounts¹</td>
<td>$157,330.00</td>
<td>$4,633.00</td>
</tr>
<tr>
<td>Miscellaneous Fund¹</td>
<td>$13,503.00</td>
<td>$25,860.00</td>
</tr>
<tr>
<td>Total Budgeted</td>
<td>$679,621.00</td>
<td>$780,444.00</td>
</tr>
</tbody>
</table>

¹ As defined in figures 1 and 3 above and below
² Increasing to $25,000 this year (2010-2011)

Fig. 3: Comparable Unit Operating Revenue for 2009/2010 – Civil Engineering

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/Staff Salaries &amp; Benefits¹</td>
<td>$689,428.00</td>
<td>84.5%</td>
</tr>
<tr>
<td>Institutional Funds²</td>
<td>$51,523.00</td>
<td>6.3%</td>
</tr>
<tr>
<td>Faculty Travel¹</td>
<td>$9,000.00</td>
<td>1.1%</td>
</tr>
<tr>
<td>Foundation²</td>
<td>$2,134.00</td>
<td>.2%</td>
</tr>
<tr>
<td>Miscellaneous Fund³</td>
<td>$64,068.00</td>
<td>7.9%</td>
</tr>
<tr>
<td><strong>Total Operating Revenue</strong></td>
<td><strong>$816,153.00</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

¹ This is not a revenue account. Budget posted by the university each year
² Operating expense budget. This is not a revenue account. Budget posted by the university each year
³ Faculty travel. This is not a revenue account. Budget posted by the university
⁴ CE foundation account
⁵ Indirect funds earned from grants; CCEC Events Fund (This is a college level account; budget/revenue at the college level.)
### Fig. 4: Comparable Unit Expenditures for 2009/2010–Civil

<table>
<thead>
<tr>
<th>Type of Expenditure</th>
<th>Amount ($)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Salaries¹</td>
<td>$423,547.00</td>
<td>53.2%</td>
</tr>
<tr>
<td>Other Salaries &amp; Wages²</td>
<td>$291,640.00</td>
<td>36.6%</td>
</tr>
<tr>
<td>Operating Expenses³</td>
<td>$ 51,523.00</td>
<td>6.5%</td>
</tr>
<tr>
<td>Faculty Travel⁴</td>
<td>$ 9,504.00</td>
<td>1.2%</td>
</tr>
<tr>
<td>Foundation⁵</td>
<td>$  3,372.00</td>
<td>.4%</td>
</tr>
<tr>
<td>Miscellaneous Fund⁶</td>
<td>$ 17,294.00</td>
<td>2.1%</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>$796,880.00</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

¹ One 12-month faculty; five 9-month faculty; salary only/benefits not included  
² Two USPS 12 month salary/benefits not included; Faculty and USPS benefits for 2009-2010; Community Relations Coordinator/33% of salary; CE adjuncts; Summer School 1 (2009)/benefits included; Summer School 2 (2010)/benefits included  
³ 33% of the SoE annual budget  
⁴ Travel allocation from academic affairs  
⁵ CE foundation account  
⁶ Indirect funds earned from grants; CE’s portion of expenditure from the CCEC Events Fund.
Section III
III. CURRICULUM

A. Program Description

2. Degree title: Bachelor of Science in Building Construction.
3. Credit hours required for the degree: 120 semester credit hours.
4. List program options: None.
5. Other degree programs administered by the construction unit: None.

B. Institutional Requirements

1. State the curricular requirements established at the state level.

In 1995, the Florida State Legislature passed legislation requiring a common course numbering system for the Florida community colleges and universities. The Legislature also mandated a common set of pre-requisites for every academic program, termed General Education. In addition, the Legislature requested all BS degree programs be completed in 120 semester credit hours. Bachelor of Science (BS) academic programs exceeding 120 semester credit hours had to receive exception approval. The University of North Florida (UNF) BS CM academic program consists of a total of 120 semester credit hours (CH). However, students are required to take, as a minimum, College Algebra and College Trigonometry to be admitted to Physics I, which is required in the CM Department.

The State of Florida General Education mandatory requirements for the UNF Construction Management academic program, 36 semester credit hours, are as shown:

**State of Florida Gordon Rule**

In order to insure that a student has college-level communications and computational skills (State Rule 6A-10.030-“the Gordon Rule”), a student is required to produce written work of an overall total of 24,000 words. This requirement is met via taking various courses in the General Education curriculum. The required English Composition courses meet 18,000 of the 24,000 written word requirements. The remaining 6,000 written word requirement is met by a student taking selected courses that also satisfy the Gordon Rule such as PHI 2630 G(W) Contemporary Ethical Issues and EUH 1000 G(W) Humanities Freshman Core I.

In addition, students must meet the Cultural Diversity requirement. Courses meeting this requirement are indicated with CD after the course number.

**English 9 CH**
- ENC 1101 G (W) College Writing (3)
- LIT 2000 G (W) Introduction to Literature (3)
- LIT 2932 G (W) Themes and Types in Literature (3)

**Mathematics 6 CH**
- STA 2023 G (M) Elementary Statistics for Business (3) CM pre-requisite
- MAC 2233 Calculus for Business (3) CM pre-requisite
**Humanities 9 CH**

*Choose 1:*

- EUH 1000 G (W) Freshman Core I (3)
- EUH 1001 G (W) Freshman Core II (3)

*Choose 1:*

- PHI 2010 G (W) Introduction to Philosophy (3)
- PHI 2100 G (W) Reasoning/Critical Thinking (3)
- PHI 2630 G (W) Contemporary Ethical Issues (3)

*Choose 1:*

- ARH 2000 Art Appreciation (3)
- ARH 2050 Art History Survey I (3)
- MUH 2012 Enjoyment of Music (3)
- MUH 2017 History and Appreciation of Rock (3)
- MUH 2018 The Evolution of Jazz (3)
- MUT 1111 Theory I (3)

**Social Science 6 CH**

- ECO 2013 Macroeconomics (3) CM pre-requisite

*Choose 1:*

- ANT 2000 CD Introduction to Anthropology (3)
- ANT 2423 CD Kinship and Family (3)
- ASN 2003 CD Introduction to Asia (3)
- GEO 2420 CD Cultural Geography (3)
- MMC 2701 CD Communicating Across Cultures (3)
- PUP 2312 CD Race/Gender/Politics (3)
- REL 2300 CD Comparative Religion (3)

**Natural Science 6 CH**

- PHY 2053 Algebra-based Physics I (3) CM pre-requisite
- PHY 2054 Algebra-based Physics II (3) CM pre-requisite

2. **State the curricular requirements established at the institution level.**

Students must complete the State of Florida General Education requirements by selecting additional courses provided by UNF. At the institutional level, the following additional General Education courses are to be taken as part of the CM Program of Study. These courses are:

- BCN 1251 Construction Drawing (3)
- BCN 1210C Construction Materials (3)
- BCN 2405 Introduction to Structures (3)
- PHY 2053L Algebra-based Physics I Laboratory (1)
- PHY 2054L Algebra-based Physics II Laboratory (1)
- CGS 1100 Computer Applications for Business (3)
- ACG 2021 Principles of Accounting (3)
- BUL 3130 Legal Environment of Business (3)
- ECO 2023 Principles of Microeconomics (3)
3. State the curricular requirements established at the college level.

There are no specific college requirements other than the state general education requirements.

BCN 3012  History & Introduction to Construction (3)
BCN 3223  Soils and Foundations (3)
BCN 3224  Construction Techniques (3)
BCN 3611C Building Construction Design & Codes (3)
BCN 3762  Introduction to Construction Computing (3)
BCN 4284  Surveying: Construction Layout (3)
BCN 4431  Structural Systems (3)
BCN 4591C Mechanical and Electrical Systems (3)
BCN 4612  Advanced Construction Estimating (3)
BCN 4708  Construction Documents/Contracts (3)
BCN 4709  Construction Project Management Capstone (3)
BCN 4720  Construction Project Planning & Scheduling (3)
BCN 4730  Construction Safety (3)
BCN 4753  Construction Administration & Economics (3)
BCN 4931  Seminars: Construction Management (1)
BCN 4944  Construction Management Internship (3)
MAR 3023  Principles of Marketing (3)

Choose 1:
MAN 3025  Administrative Management of Business (3)
REE 4043  Real Estate Analysis (3)
ACG 2071  Principles of Managerial Accounting (3)

Choose 2:
CM Electives
BCN 4751C Housing & Land Development I (3)
BCN 4758C Housing & Land Development II (3)
BCN 4587C Green Construction & Sustainability I (3)
BCN 4594C Green Construction & Sustainability II (3)
BCN 4801C Industrial Construction I (3)
BCN 4802C Industrial Construction II (3)
BCN 4870C Heavy Civil Construction I (3)
BCN 4872C Heavy Civil Construction II (3)
BCN 4871C Commercial Construction I (3)
BCN 4873C Commercial Construction II (3)
BCN 4944  Construction Management Internship (3)*
BCN 4956  Study Abroad in Construction Management

* Internship can be taken for up to 6 credit hours; 3 for internship credit and 3 for a concentration selection. An extra concentration class can also be taken to take the place of the internship requirement.
C. Plan of Study

1. Date of most recent curriculum revision.

The Program of Study changes shown are a result of the CM self-assessment and continuous improvement program. Based on the most recent outcome assessment results and statistical numbers tallied from the surveys obtained, the faculty met, analyzed the feedback, and voted for the following changes in the curriculum:

**2010 CM Program Changes for 2011/2012 Academic Year**

Based on the most recent outcome assessment results and statistical numbers tallied from the surveys obtained, the faculty met, analyzed the feedback, and voted for the following changes in the curriculum for the 2010/2011 year. The college curriculum committee will meet to approve curriculum changes for the 2010/2011 year during fall term 2010.

**Commercial Construction II**
Delete this course given we are merging the content of the two part series in Commercial Construction into one course. This will change the makeup of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Green Const and Sustain II**
Delete this course given we are merging the content of the two part series in Green Construction and Sustainability into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Housing and Land Dev II**
Delete this course given we are merging the content of the two part series in Housing and Land Development into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Industrial Construction II**
Delete this course given we are merging the content of the two part series in Industrial Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Heavy Civil Construction II**
Delete this course given we are merging the content of the two part series in Heavy Civil Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. Furthermore, the new course BCN 4xxx "Construction Equipment" will absorb some of the content of this course.
Commercial Construction I
Change this course given we are merging the content of the two part series in Commercial Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and proposed textbook are changing.

Green Construct and Sustain I
Change this course given we are merging the content of the two part series in Green Construction and Sustainability into one course. This will change the makeup of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and proposed textbook are changing.

Soils and Foundations
Change prerequisite from BCN 1210c to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Construction Cost Estimating
Change prerequisite from BCN 1251 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Structural Systems
Change prerequisite from BCN 2405 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Construction Documents/Contracts
Change prerequisite from BUL 3130 and BCN4709 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Constr Project Plan/Scheduling
Change prerequisite from BCN 3611c and BCN 3782 to BCN 3782 only. The reason for this is that we've determined BCN 3611c is not needed prior to BCN 4720.

Construction Safety
Expand the contents of this course to further enhance our program by offering “human factors” modules within the safety course. This allows our students to learn techniques that will equip them for managing people specifically involved in construction projects. Including this topic in a safety class is common in other construction management accredited schools. In particular, the course description, outcomes, and the proposed textbook are changing.
Housing and Land Development I
Change this course given we are merging the content of the two part series in Housing and Land Development into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and prerequisites are changing.

Industrial Construction I
Change this course given we are merging the content of the two part series in Industrial Construction into one course. This will change the makeup of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and prerequisites are changing. Change prerequisite to all program prerequisites.

International Construction – New Course Added
Students in this course examine the problems that arise in construction when construction firms conduct business across national boundaries. They study major issues and practices in international construction and do an intensive analysis of the process, practice, theory in international construction and compare construction systems used. The students also analyze the effect of international construction on firms and the impact that globalization is having on the construction industry and the environment. The learner will be able to define international construction and globalization of the construction industry. The learner will be able to identify major issues in the international construction market, including cultural complexities, economic factors, global alliances, legal issues, and environmental concerns. The learner will be able to analyze the effects globalization has on a construction firm.

Construction Finance and Cost Controls– New Course Added
Students in this course examine the financial environment of a contracting company. They study the financial impact of decisions made at all levels in the contracting firm including comparative cost analysis. They also analyze the process, practice, and theory of cost controls. Students compare financial and cost control management techniques and the effect of these practices on the firm in relation to profit, profit margin, cash flow, bidding, capital equipment, procurement practices and budgeting.

Construction Equipment– New Course Added
Students in this course explore heavy construction equipment, construction methods, equipment productivity analysis, equipment selections, and scheduling and administration of heavy civil projects. Topics of the class will include: fundamental concepts of equipment economics, planning for earthwork construction, soil and rock, compaction and Stabilization Equipment, machine equipment power requirements, dozers, scrapers, excavators, trucks and hauling equipment, finishing equipment and cranes.
2008 CM Program Changes for 2009/2010 Academic Year

- Changes were made to streamline the program and to remove redundancy in the pre-requisites.
- Changes were made as a result of addressing the outcome assessments for the purpose of continuous improvement.

BCN 4956 Study Abroad in Construction: new class added.
BCN 1210 Construction Materials: prerequisite MAC 1147 deleted.
BCN 2405 Introduction to Structures: prerequisite MAC 1147 deleted.
BCN 3762 Building Design and Codes: prerequisite BCN 1251 deleted; added “all lower level program prerequisites”.
BCN 4284 Surveying: Construction Layout: new course number BCN 2280; prerequisite PHY 2054 deleted.
BCN 4587C Green Construction and Sustainability I: prerequisites BCN 3611 and BCN 3223 deleted; added “all lower level program prerequisites”.
BCN 4594C Green Construction and Sustainability II: prerequisites PHY 2054 and BCN 4612 deleted; added “all lower level program prerequisites”.
BCN 4730 Construction Safety: prerequisite BCN 3762 deleted; added “all lower level program prerequisites”.
BCN 4753 Construction Administration and Economics: prerequisite BCN 4720 deleted; added “all lower level program prerequisites”.
BCN 4758C Housing and Land Development II: prerequisites PHY 2054 and BCN 4612 deleted.
BCN 4801C Industrial Construction I: prerequisite PHY 2054 deleted.
BCN 4802C Industrial Construction II: prerequisites PHY 2054 and BCN 4612 deleted.
BCN 4872C Industrial Construction II: prerequisites PHY 2054 and BCN 4612 deleted.
BCN 4873C Commercial Construction II: prerequisites PHY 2054 and BCN 4612 deleted.

2. List the course requirements by semester.

Building Construction Management 2010-2011 Catalog

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENC 1101 G(W) College Writing</td>
<td>3</td>
<td>Gen Ed Humanities II</td>
</tr>
<tr>
<td>CGS 1100 Computer Apps for Business</td>
<td>3</td>
<td>ACT 2021 Prin. of Accounting</td>
</tr>
<tr>
<td>Gen Ed Humanities I</td>
<td>3</td>
<td>LIT 2000 G(W) Intro to Literature</td>
</tr>
<tr>
<td>Gen Ed Cultural Diversity</td>
<td>3</td>
<td>PHY 2054 College Physics II (NS)</td>
</tr>
<tr>
<td>PHY 2053 College Physics I (NS)</td>
<td>3</td>
<td>PHY 2054L College Physics II Lab</td>
</tr>
<tr>
<td>PHY 2053L College Physics I Lab</td>
<td>1</td>
<td>STA 2023 G(M) Elem Statistics for Business</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>Total</td>
</tr>
</tbody>
</table>
D. Degree Requirements – Four-Year Baccalaureate Program

List the courses and credit hours required for the degree. Group according to the specified divisions and subdivisions as defined in ACCE Document 103, Standards and Criteria for Accreditation of Postsecondary Construction Education Degree Programs. Courses are to be classified according to the content rather than the academic unit offering the course. If appropriate, credit hours for a course may be divided between two divisions. Electives whose options span more than one division are to be listed under "Other Requirements."

The ACCE requirement of a minimum of 120 semester credit hours (CH) is segmented into six curriculum categories such as General Education and Construction. A summary comparison of the current UNF CM curriculum versus the ACCE accreditation standards shows that UNF’s CM academic program complies with ACCE requirements.

<table>
<thead>
<tr>
<th>Curriculum Category</th>
<th>ACCE Minimum</th>
<th>UNF Fall 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Mathematics &amp; Science</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Construction Science*</td>
<td>20*</td>
<td>27*</td>
</tr>
</tbody>
</table>
### Fig. 5: UNF General Education

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENC 1101 G(W)</td>
<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>LIT 2000 G(W)</td>
<td>Introduction to Literature</td>
<td>3</td>
</tr>
<tr>
<td>LIT 2932 G(W)</td>
<td>Themes and Types in Literature</td>
<td>3</td>
</tr>
<tr>
<td>Choose 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUH 1000 G(W)</td>
<td>Freshman Core I</td>
<td>3</td>
</tr>
<tr>
<td>EUH 1001 G(W)</td>
<td>Freshman Core II</td>
<td>3</td>
</tr>
<tr>
<td>Choose 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHI 2010 G(W)</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHI 2100 G(W)</td>
<td>Reasoning/Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHI 2630 G(W)</td>
<td>Contemporary Ethical Issues</td>
<td>3</td>
</tr>
<tr>
<td>Choose 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARH 2000</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ARH 2050</td>
<td>Art History Survey I</td>
<td>3</td>
</tr>
<tr>
<td>MUH 2012</td>
<td>Enjoyment of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUH 2017</td>
<td>History and Appreciation of Rock</td>
<td>3</td>
</tr>
<tr>
<td>MUH 2018</td>
<td>The Evolution of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUT 1111</td>
<td>Theory I</td>
<td>3</td>
</tr>
<tr>
<td>Choose 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANT 2000 CD</td>
<td>Introduction to Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANT 2423 CD</td>
<td>Kinship and Family</td>
<td>3</td>
</tr>
<tr>
<td>ASN 2003 CD</td>
<td>Introduction to Asia</td>
<td>3</td>
</tr>
<tr>
<td>GEO 2420 CD</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>MMC 2701 CD</td>
<td>Communicating Across Cultures</td>
<td>3</td>
</tr>
<tr>
<td>PUP 2312 CD</td>
<td>Race/Gender/Politics</td>
<td>3</td>
</tr>
<tr>
<td>REL 2300 CD</td>
<td>Comparative Religion</td>
<td>3</td>
</tr>
</tbody>
</table>

### Fig. 6: UNF Mathematics and Science

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA 2023 G(M)</td>
<td>Elementary Statistics for Business</td>
<td>3</td>
</tr>
<tr>
<td>MAC 2233</td>
<td>Calculus for Business</td>
<td>3</td>
</tr>
<tr>
<td>*MAC 1114</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>*MAC 1105</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>*PHY 1020</td>
<td>Intro to Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHY 2054</td>
<td>Algebra-based Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHY 2053</td>
<td>Algebra-based Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHY 2053L</td>
<td>Algebra-based Physics I Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

*(Construction Science plus Construction must be at least 50 CH)*
<table>
<thead>
<tr>
<th>PHY 2054L</th>
<th>Algebra-based Physics II Laboratory</th>
<th>1</th>
</tr>
</thead>
</table>

* Must be passed as a pre-requisite for Physics.
Fig. 7: UNF Business and Management 21 Credit Hours/18 Credit Hours Required by ACCE
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4/2011</td>
<td>SECTION III</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>CGS 1100</td>
<td>Computer Applications for Business</td>
<td>3</td>
</tr>
<tr>
<td>ECO 2013</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECO 2023</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ACG 2021</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MAR 3023</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUL 3130</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>Choose 1:</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>ACG 2071</td>
<td>Principles of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MAN 3025</td>
<td>Administrative Management</td>
<td>3</td>
</tr>
<tr>
<td>REE 4043</td>
<td>Business Real Estate Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>
Fig. 8: UNF Construction Science 27 Credit Hours/20 Credit Hours Required by ACCE

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 1210C*</td>
<td>Construction Materials</td>
<td>3</td>
</tr>
<tr>
<td>BCN 1251</td>
<td>Construction Drawing</td>
<td>3</td>
</tr>
<tr>
<td>BCN 2280</td>
<td>Survey: Construction Layout</td>
<td>3</td>
</tr>
<tr>
<td>BCN 2405</td>
<td>Introduction to Structures</td>
<td>3</td>
</tr>
<tr>
<td>BCN 3223**</td>
<td>Soils and Foundations</td>
<td>3</td>
</tr>
<tr>
<td>BCN 3224**</td>
<td>Construction Techniques</td>
<td>3</td>
</tr>
<tr>
<td>BCN 3762</td>
<td>Building Construction Design&amp; Codes</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4431</td>
<td>Structural Systems</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4591C**</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

*BCN 3012* | History/Intro to Construction                          | 3            |
| BCN 3611   | Construction Cost Estimating                            | 3            |
| BCN 4612*  | Advanced Construction Estimating                       | 3            |
| BCN 4720   | Const Project Planning & Scheduling                    | 3            |
| BCN 4708** | Construction Documents and Contracts                   | 3            |
| BCN 4730** | Construction Safety                                    | 3            |
| BCN 4753*  | Const Administration & Economics                      | 3            |
| BCN 4709   | Const Project Management Capstone                      | 3            |
| BCN 3782*  | Intro. to Construction Computing                      | 3            |
| BCN 4931   | Seminars: Construction Management                     | 1            |
| *BCN 4944**| Construction Management Internship                     | 3            |

* Required by ACCE a combined 50 credit hours in Construction and Construction Science courses.
# Contains Oral and Written Communications Component
## Contains Ethics Component

Fig. 9: UNF Construction 31 Credit Hours/20 Credit Hours Required by ACCE

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>BCN 3012</em></td>
<td>History/Intro to Construction</td>
<td>3</td>
</tr>
<tr>
<td>BCN 3611</td>
<td>Construction Cost Estimating</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4612*</td>
<td>Advanced Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4720</td>
<td>Const Project Planning &amp; Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4708**</td>
<td>Construction Documents and Contracts</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4730**</td>
<td>Construction Safety</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4753*</td>
<td>Const Administration &amp; Economics</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4709</td>
<td>Const Project Management Capstone</td>
<td>3</td>
</tr>
<tr>
<td>BCN 3782*</td>
<td>Intro. to Construction Computing</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4931</td>
<td>Seminars: Construction Management</td>
<td>1</td>
</tr>
<tr>
<td><em>BCN 4944</em>*</td>
<td>Construction Management Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Fig. 10: Other Requirements 16 Credit Hours

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title or Elective Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose 2</td>
<td>-----</td>
<td>-</td>
</tr>
<tr>
<td>BCN 4587C</td>
<td>Green Construction &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4594C</td>
<td>Green Construction &amp; Sustainability II</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4751C</td>
<td>Housing &amp; Land Development I</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4758C</td>
<td>Housing &amp; Land Development II</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4801C</td>
<td>Industrial Construction I</td>
<td>3</td>
</tr>
<tr>
<td>BCN 4802C</td>
<td>Industrial Construction II</td>
<td>3</td>
</tr>
</tbody>
</table>
E. Required Curriculum Categories, Core Subject Matter, & Curriculum Topical Content

Provide evidence of inclusion of the required curriculum categories, core subject matter, and curriculum topical content using the following matrix. Note that 1 semester credit hour equals 15 instructional hours.

### 1.0 GENERAL EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>BCN 4870C</th>
<th>BCN 4872C</th>
<th>BCN 4871C</th>
<th>BCN 4873C</th>
<th>BCN 4944</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title</td>
<td>Heavy Civil Construction I</td>
<td>Heavy Civil Construction II</td>
<td>Commercial Construction I</td>
<td>Commercial Construction II</td>
<td>Construction Management Internship</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**As shown in Section J. Course Descriptions, there is a wide selection of courses open to students to satisfy the General Education Requirements. Thus, depending on General Education courses selected, there could be additional communication instruction. The same is true for ethics in the General Education course selections. Ethics and communications are integrated throughout the CM academic program. For example, BUL 3130 Legal Environment of Business and BCN 4944 Construction Management Internship have specific ethics modules within the course. Project reports and presentations are a common practice in most CM courses.**

### ACCE Standards Communications (ACCE Form 103)

1) GENERAL EDUCATION.....15 semester hours

It is important that every Constructor’s education include appropriate courses in communications, social sciences, and the humanities. This content should reflect the needs of the construction industry as well as the philosophy of the educational institution.
Construction is concerned with people and their relationships. Thus, the ability to communicate, both orally and in writing, and the understanding of human behavior are essential assets to the constructor.

<table>
<thead>
<tr>
<th>Core Subject Matter</th>
<th>Minimum Academic Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral and written communication*</td>
<td>8 semester hours</td>
</tr>
<tr>
<td>Ethics</td>
<td>1 semester hour</td>
</tr>
</tbody>
</table>

* In addition, oral presentation, business writing and ethics must be integrated throughout the construction-specific curriculum. Example courses in this division include human relations, psychology, sociology, social science, literature, history, philosophy, art, language, political science, and other appropriate courses. Exclusions: Courses concerned with the physical education or military science do not fulfill this requirement.

State of Florida General Education Requirements

Students attending two-year community colleges or four-year universities in the State of Florida must satisfy General Education Requirements. The General Education Curriculum of 36 semester credit hours attempts to fulfill both the letter and the spirit of Florida regulations concerning communication and computational abilities. The General Education Requirements are:

- **English**: 9 CH
- **Mathematics**: 6 CH
- **Humanities**: 9 CH
- **Social Science**: 6 CH
- **Natural Science**: 6 CH

In the English Composition area, all students are required to take:

- ENC 1101 G (W) College Writing (3)
- LIT 2000 G (W) Introduction to Literature (3)
- LIT 2932 G (W) Themes and Types in Literature (3)

These three courses focus on textual analysis and written reasoned argument. ENC 1101 addresses a variety of non-literary texts in an introductory course in critical reading and writing. LIT 2110 provides a general introduction to literature and makes a literary text in three genres - fiction, poetry and drama - the subject of analysis, the occasion for argument. LIT 2932 provides a focused investigation of a particular theme or type of literature and advanced practice in analysis and argument. Each course requires 6,000 words of writing and must be completed with a grade of “C” or higher.

State of Florida Gordon Rule

In order ensure that a student has college-level communications and computational skills (State Rule 6A- 10.030-”the Gordon Rule”), a student is required to produce written work of an overall total of 24,000 words. This requirement is met via taking various courses in the General Education curriculum. The required English Composition courses meet 18,000 of the 24,000 written word requirements. The remaining 6,000 written word requirement is met by a student
taking selected courses that also satisfy the Gordon Rule such as PHI 2630 G(W) Contemporary Ethical Issues and EUH 1000 G(W) Humanities Freshman Core I.

**UNF Department of Construction Management**

Minimum requirements for admission into the Construction Management Program include:

- Completion of the minimum General Education Requirement from a State of Florida two-year community college or four-year university;
- A minimum of 63 credit hours of college course work with an overall GPA of 2.0 or better;
- Completion of the prerequisites and core courses listed in the Program of Study with a grade of “C” or better in each course.

**Summary**

In summary, ACCE requires oral and written communication in 33% of the courses throughout the curriculum. UNF requires 9 semester credit hours of English. The State of Florida requires students to produce a minimum of 24,000 words of written communications. In Upper Division, the CM Department integrates oral presentations, business writings and ethics throughout the curriculum to cover the ACCE requirement. For example, the Internship includes an ethics module on Ethics in Management as observed on the job, as well as all the other classes that include ethics as shown in the course binders.

**Important Notes on the Curriculum**

The curriculum includes seven (7) core courses of construction science that include Ethics. This exceeds the requirement of five (5) courses as stated in 3.32 of Document 103. Additionally, many elective classes include an Ethics component.

The curriculum includes twelve (12) core courses of construction science that include Oral and Written Communication. These courses out of a total of 20 courses in the curriculum exceed the required 33% as stated in 3.32 of Document 103. Additionally, many elective classes include an Oral and Written Communication component.
## 2.0 MATHEMATICS & SCIENCE

<table>
<thead>
<tr>
<th></th>
<th>Mathematics and Science (15 sem/22 qt)</th>
<th>225 instructional hours*</th>
<th>PHY 2053</th>
<th>PHY 2053L</th>
<th>PHY 2054</th>
<th>PHY 2054L</th>
<th>STA 2023</th>
<th>MAC 2233</th>
<th>MAC 1114</th>
<th>MAC 1147</th>
<th>PHY 1020C</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>45</td>
<td>15</td>
<td>45</td>
<td>15</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>2.1</td>
<td>Physical or Environmental science [analytical] (8 sem/12 qt)</td>
<td>120 instructional hours</td>
<td>45</td>
<td>15</td>
<td>45</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>2.1.1</td>
<td>Selection Options: Physics; Chemistry; Geology; Environmental Science;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.2</td>
<td>Statistics and/or Mathematics (3 sem/4 qt)</td>
<td>45 instructional hours</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2.1</td>
<td>Selection Options: Analytic Geometry, Pre-calculus, Calculus, Linear Algebra, Statistics, Other Sciences, Computer Science.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*Students are required to take, as a minimum, College Algebra and College Trigonometry to be admitted to Physics I, which is required in the CM Department.

## 3.0 BUSINESS & MANAGEMENT

<table>
<thead>
<tr>
<th></th>
<th>Business and Management (18 sem/27 qt)</th>
<th>270 instructional hours</th>
<th>ACG 2021</th>
<th>MAR 3023</th>
<th>BUL 3130</th>
<th>BUS ELEC</th>
<th>ECO 2013</th>
<th>ECO 2023</th>
<th>*Business Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>*Business Elective</td>
</tr>
<tr>
<td>3.1</td>
<td>Economics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Accounting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Principles of Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Business Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Business Elective, Choose 1: MAN 3025 Administrative Management (3) - 45 inst. hours Principles of Management; REE 4043 Business Real Estate Management

(3) – 15 inst. hours each Economics, Management, Law; ACG 2071 Principles of Management Accounting (3) - 45 inst. hours Accounting.
## 4.0 CONSTRUCTION SCIENCE

### 4.1 Design Theory (3 sem/4 qt) 45 instructional hours

Select one or more of the following options: Structural Mechanics, Electricity; Thermodynamics; Soil Mechanics.

<table>
<thead>
<tr>
<th>4.1</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 Analysis and Design of Construction Systems (6 sem/9 qt) 90 instructional hours

(It is the intent of this requirement to ensure that construction program graduates have, at least minimum, some exposure to all basic systems that may be incorporated into a building project)

<table>
<thead>
<tr>
<th>4.2</th>
<th>Civil</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2</th>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2</th>
<th>Mechanical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2</th>
<th>Structural</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.3 Construction Methods and Materials (6 sem/9 qt) 90 instructional hours [including: concrete, steel, wood, and soils]

<table>
<thead>
<tr>
<th>4.3</th>
<th>Composition and properties</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th>Terminology &amp; Units of measure</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th>Standard designations, sizes, and graduations</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4.3</th>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

SECTION III
<table>
<thead>
<tr>
<th>4.3</th>
<th>Conformance references and testing techniques</th>
<th>BCN 2405</th>
<th>BCN 4591C</th>
<th>BCN 3762</th>
<th>BCN 1251</th>
<th>BCN 2280</th>
<th>BCN 4431</th>
<th>BCN 3223</th>
<th>BCN 3224</th>
<th>BCN 1210C</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3</td>
<td>Products, systems and interface issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4.3</td>
<td>Equipment applications and utilization</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Comparative cost analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4.3</td>
<td>Assembly techniques &amp; equipment selection</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 4.3  | Building Codes and Standards                  | X       | X         |         |         |         |         |         |         |         | X   | X   |

<table>
<thead>
<tr>
<th>4.4</th>
<th><strong>Construction Graphics (1 sem/1.5 qt) 15 instructional hours</strong></th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4</td>
<td>Basic sketching and drawing techniques</td>
<td>X</td>
</tr>
<tr>
<td>4.4</td>
<td>Graphic vocabulary</td>
<td>X</td>
</tr>
<tr>
<td>4.4</td>
<td>Detail hierarchies, scale, content</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Notes and specifications, reference conventions</td>
<td>X</td>
</tr>
<tr>
<td>4.4</td>
<td>Computer applications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.5</th>
<th><strong>Construction Surveying (1 sem/1.5 qt) 15 instructional hours</strong></th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>Survey, layout, and alignment control</td>
<td>X</td>
</tr>
<tr>
<td>4.5</td>
<td>Site organization and development</td>
<td>X</td>
</tr>
</tbody>
</table>
## 5.0 CONSTRUCTION

<table>
<thead>
<tr>
<th>Section</th>
<th>Course Description</th>
<th>Instructional Hours</th>
<th>BCN 3012</th>
<th>BCN 3611C</th>
<th>BCN 4612</th>
<th>BCN 4721</th>
<th>BCN 4733</th>
<th>BCN 4708</th>
<th>BCN 4730</th>
<th>BCN 4795</th>
<th>BCN 4782</th>
<th>BCN 4931</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Construction** (20 sem/30 qt) 300 instructional hours</td>
<td>45 45 45 45 45 45 45 45 45 45 45 45 15</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.1</td>
<td>Estimating (3 sem/4 qt) 45 instructional hours</td>
<td>45 45</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.1.1</td>
<td>Types of estimates and uses</td>
<td></td>
<td>X</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.1.2</td>
<td>Quantity takeoff</td>
<td></td>
<td>X</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.2</td>
<td>Labor and equipment productivity factors</td>
<td></td>
<td></td>
<td>X</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.3</td>
<td>Pricing and price data bases</td>
<td></td>
<td></td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.4</td>
<td>Job direct and indirect costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.5</td>
<td>Bid preparations and bid submission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.6</td>
<td>Computer applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Planning and Scheduling (3 sem/4 qt) 45 instructional hours</td>
<td>45 45 45 45 45 45 45 45 45 45 45 45 10</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.1</td>
<td>Parameters affecting project planning</td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.2</td>
<td>Schedule information presentation</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.3</td>
<td>Network diagramming and calculations with CPM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.4</td>
<td>Resource allocation and management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X X X X X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Impact of changes</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Computer applications</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td><strong>Construction Accounting and Finance (1 sem/1.5 qt) 15 instructional hours</strong></td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Cost accounting and industry formats</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Fixed and variable costs: insurance, bonding, marketing, general and administrative expenses</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Bidding and procurement practices</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Record and report practices</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Capital equipment, depreciation, and expensing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Forecasting costs, cash flow requirements</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Payment processes and time value of money</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td><strong>Construction Law (1 sem/1.5 qt) 15 instructional hours</strong></td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Construction contracts, roles &amp; responsibilities of parties</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>The regulatory environment and licensing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Lien laws and the contractor's rights</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>National and local labor law</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Administrative procedures to avoid disputes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Safety (1 sem/1.5 qt) 15 instructional hours</td>
<td></td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Safe practices</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Mandatory procedures, training, records, and maintenance</td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Compliance, inspection, and penalties</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Project Management (3 sem/4 qt) 45 instructional hours</td>
<td></td>
<td>45 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Concepts, roles, and responsibilities</td>
<td>X</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Labor relations</td>
<td>X</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Administrative systems and procedures</td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Cost control data and procedures</td>
<td>X</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Documentation at job site and office</td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Quality control philosophies and techniques</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Computer applications</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Combined Construction Science and Construction 50 semester or 75 quarter hours total - 750 instructional hours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OTHER REQUIREMENTS - 4.0  CONSTRUCTION SCIENCE

SECTION III
<table>
<thead>
<tr>
<th>4</th>
<th>Construction Science** (20 sem/30 qt) 300 instructional hours</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Design Theory (3 sem/4 qt) 45 instructional hours</td>
<td></td>
</tr>
<tr>
<td>4.1.1</td>
<td>Select one or more of the following options: Structural Mechanics, Electricity; Thermodynamics; Soil Mechanics.</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Analysis and Design of Construction Systems (6 sem/9 qt) 90 instructional hours (It is the intent of this requirement to ensure that construction program graduates have, at least minimum, some exposure to all basic systems that may be incorporated into a building project)</td>
<td></td>
</tr>
<tr>
<td>4.2.1</td>
<td>Civil</td>
<td></td>
</tr>
<tr>
<td>4.2.2</td>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>4.2.3</td>
<td>Mechanical</td>
<td></td>
</tr>
<tr>
<td>4.2.4</td>
<td>Structural</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Construction Methods and Materials (6 sem/9 qt) 90 instructional hours [including: concrete, steel, wood, and soils]</td>
<td></td>
</tr>
<tr>
<td>4.3.1</td>
<td>Composition and properties</td>
<td></td>
</tr>
<tr>
<td>4.3.2</td>
<td>Terminology &amp; Units of measure</td>
<td>X</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Standard designations, sizes, and graduations</td>
<td>X</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Conformance references and testing techniques</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Products, systems and interface issues</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>4.3</td>
<td>Equipment applications and utilization</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Comparative cost analysis</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Assembly techniques &amp; equipment selection</td>
<td></td>
</tr>
</tbody>
</table>

| 4.3  | Building Codes and Standards          |  |  |

<table>
<thead>
<tr>
<th>4.4</th>
<th>Construction Graphics (1 sem/1.5 qt) 15 instructional hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4</td>
<td>Basic sketching and drawing techniques</td>
</tr>
<tr>
<td>4.4</td>
<td>Graphic vocabulary</td>
</tr>
<tr>
<td>4.4</td>
<td>Detail hierarchies, scale, content</td>
</tr>
<tr>
<td>4.4</td>
<td>Notes and specifications, reference conventions</td>
</tr>
<tr>
<td>4.4</td>
<td>Computer applications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.5</th>
<th>Construction Surveying (1 sem/1.5 qt) 15 instructional hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>Survey, layout, and alignment control</td>
</tr>
<tr>
<td>4.5</td>
<td>Site organization and development</td>
</tr>
</tbody>
</table>
## OTHER REQUIREMENTS 5.0  CONSTRUCTION

<table>
<thead>
<tr>
<th>Section</th>
<th>Course Description</th>
<th>BCN 4587C</th>
<th>BCN 45894C</th>
<th>BCN 45705C</th>
<th>BCN 45871C</th>
<th>BCN 45873C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td><strong>Construction</strong> (20 sem/30 qt) 300 instructional hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Estimating (3 sem/4 qt) 45 instructional hours</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.11</td>
<td>Types of estimates and uses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.12</td>
<td>Quantity takeoff</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.13</td>
<td>Labor and equipment productivity factors</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.14</td>
<td>Pricing and price data bases</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.15</td>
<td>Job direct and indirect costs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.16</td>
<td>Bid preparations and bid submission</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.17</td>
<td>Computer applications</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td><strong>Planning and Scheduling</strong> (3 sem/4 qt) 45 instructional hours</td>
<td>X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.21</td>
<td>Parameters affecting project planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.22</td>
<td>Schedule information presentation</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.23</td>
<td>Network diagramming and calculations with CPM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.24</td>
<td>Resource allocation and management</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.25</td>
<td>Impact of changes</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.26</td>
<td>Computer applications</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td><strong>Construction Accounting and Finance</strong> (1 sem/1.5 qt) 15 instructional hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.31</td>
<td>Cost accounting and industry formats</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.32</td>
<td>Fixed and variable costs: insurance, bonding, marketing, general and administrative expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.33</td>
<td>Bidding and procurement practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.34</td>
<td>Record and report practices</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.35</td>
<td>Capital equipment, depreciation, and expensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.36</td>
<td>Forecasting costs, cash flow requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION III
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.37</td>
<td>Payment processes and time value of money</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.41</td>
<td>Construction contracts, roles &amp; responsibilities of parties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.42</td>
<td>The regulatory environment and licensing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.43</td>
<td>Lien laws and the contractor's rights</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.44</td>
<td>National and local labor law</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.45</td>
<td>Administrative procedures to avoid disputes</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.51</td>
<td>Safe practices</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.53</td>
<td>Mandatory procedures, training, records, and maintenance</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.55</td>
<td>Compliance, inspection, and penalties</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.61</td>
<td>Concepts, roles, and responsibilities</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.62</td>
<td>Labor relations</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.63</td>
<td>Administrative systems and procedures</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.64</td>
<td>Cost control data and procedures</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.65</td>
<td>Documentation at job site and office</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.66</td>
<td>Quality control philosophies and techniques</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5.67</td>
<td>Computer applications</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Combined Construction Science and Construction 50 semester or 75 quarter hours total - 750 instructional hours**
F. Degree Requirements - Two Year Associate Degree Program

Not applicable. UNF does not offer a two year Associate Degree Program in Construction Management.

G. Required Curriculum Categories, Core Subject Matter, Topical Content

Not applicable. UNF does not offer a two year Associate Degree Program in Construction Management.

H. Course Sequencing

List the courses with their prerequisites. Courses without prerequisites need not be shown.

BCN 1210C - Construction Materials (3)
Prerequisite: Declared building majors only.

BCN 2405 - Introduction to Structures (3)
Prerequisites: PHY 2053 and PHY 2053L.

BCN 3223 - Soils and Foundations (3)
Prerequisites: All lower level program prerequisites.

BCN 3224 – Construction Techniques (3)
Prerequisite: BCN 3223.

BCN 3611C - Construction Cost Estimating (3)
Prerequisites: All lower level program prerequisites.

BCN 3762 - Construction Design & Codes (3)
Prerequisite: All lower level program prerequisites.

BCN 3782 - Introduction to Construction Computing (3)
Prerequisite: CGS 1100 or CGS 1570.

BCN 4431 - Structural Systems (3)
Prerequisite: All lower level program prerequisites.

BCN 4587C – Green Construction & Sustainability I (3)
Prerequisites: All lower level program prerequisites.

BCN 4591C – Mechanical and Electrical Systems (3)
Prerequisite: All lower level program prerequisites.
BCN 4594C - Green Construction & Sustainability II (3)
Prerequisites: All lower level program prerequisites.

BCN 4612 - Advanced Construction Estimating (3)
Prerequisite: BCN 3611C.

BCN 4708 - Construction Documents/Contracts (3)
Prerequisites: BUL 3130 and all lower level program prerequisites.

BCN 4709 – Construction Management Capstone (3)
Co-requisite: BCN 4931.

BCN 4720 - Construction Project Planning & Scheduling (3)
Prerequisites: All lower level program prerequisites.

BCN 4730 - Construction Safety (3)
Prerequisite: All lower level program prerequisites.

BCN 4751C - Housing & Land Development I (3)
Prerequisites: All lower level program prerequisites.

BCN 4753 - Construction Administration & Economics (3)
Prerequisite: All lower level program prerequisites.

BCN 4758C - Housing & Land Development II (3)
Prerequisites: BCN 4720.

BCN 4801C - Industrial Construction I (3)
Prerequisites: All lower level program prerequisites.

BCN 4802C - Industrial Construction II (3)
Prerequisites: BCN 4720.

BCN 4870C - Heavy Civil Construction I (3)
Prerequisites: All lower level program prerequisites.

BCN 4873C – Commercial Construction II
Prerequisite: BCN 4720.

BCN 4871C - Commercial Construction I (3)
Prerequisites: All lower level program prerequisites.

BCN 4872C - Heavy Civil Construction II (3)
Prerequisites: BCN 4720.
BCN 4931 - Seminars: Construction Management (1-3)
Prerequisite: Permission of Instructor. Co requisite: BCN 4709

BCN 4944 - Construction Management Internship (3)
Prerequisite: BCN 3611 or permission of Instructor.

Upper level course outside department:
MAR 3023 - Principles of Marketing (3)
Prerequisites: ECO 2013 and ECO 2023

Business Course Elective (3 CH – select one)
ACG 2071 Principles of Managerial Accounting (3)
Prerequisite: ACG 2021 and MAC 1105 or equivalents each with a grade of “C” or better.

MAN 3025 Administrative Management of Business (3)
Junior Status

REE 4043 - Real Estate Analysis (3)

Lower Division Required Courses Outside Department
STA 2023 - G (M) Elementary Statistics for Business (3)
Prerequisite: MAC 1105 or MAC 1147.

MAC 2233 - Calculus for Business (3)
Prerequisite: MAC 1105 or MAC 1147.

PHY 2053 - Algebra-based Physics I (3)
Prerequisites: MAC 1105, MAC 1114 or MAC 1147 and high school physics with a minimum of
a grade of “B” or PHY 1020C.

PHY 2053L - Algebra-based Physics I Laboratory (1)
Co requisite: PHY 2053.

PHY 2054 - Algebra-based Physics II (3)
Prerequisite: PHY 2053.

PHY 2054L - Algebra-based Physics II Laboratory (1)
Co requisite: PHY 2054.

LIT 2000 - G (W) Introduction to Literature (3)
Prerequisite: ENC 1101.

LIT 2932 - G (W) Themes and Types in Literature (3)
Prerequisite: ENC 1101 and LIT 2000.
General Education Humanities III (3 CH – select one)
MUT 1111 Theory I (3)
Co requisite: MUT 1241.

I. Course Descriptions

1. Provide in the self-evaluation study a catalog description for all required courses, including those courses taught within the construction unit.

Construction Management Courses

BCN 1210C - Construction Materials (3)
Prerequisite: Declared Building Construction majors only.
This course offers an introduction to the economic, mechanical, non-mechanical, production, and aesthetic considerations of materials currently used in construction in accordance with the 16 sections of the Construction Specification Institute (CSI) Master format. Students interact with local designers and builders to examine and document the consequences of material specification and selection.

BCN 1251 - Construction Drawing (3)
This course provides a basic knowledge on how to create and read building and architectural drawings. Topics include hand sketching, scaling of drawings, basic construction abbreviations and the extraction of information from construction drawings.

BCN 2280 – Surveying: Construction Layout (3)
Advanced construction surveying on construction layout with field and classroom exercises.

BCN 2405 - Introduction to Structures (3)
Prerequisites: PHY 2053 and PHY 2053L.
An introductory course in the evaluation of structural behavior as it relates to buildings, the properties of structural materials, and the structural behavior of load resisting members.

BCN 3012 - History of Construction (3)
An analysis of the cultural context of construction, emphasizing its centrality in the evolution and expansion of the built environments as expressions of ethical and aesthetic value systems.
BCN 3223 - Soils and Foundations (3)
Prerequisite: All lower level program prerequisites.
This course covers construction operations and processes associated with soils, demolition, foundations, concrete mix design, and earth moving equipment. This course also includes field visits, soil and concrete laboratories.

BCN 3224 - Construction Techniques (3)
Prerequisite: BCN 3223
Study of the vertical construction process to include wooden platform frame construction, cast-in-place and pre-cast concrete construction, and steel erection. Included are interior and exterior finishes, vertical transportation systems, roofing, and other building components.

BCN 3611C - Construction Cost Estimating (3)
Prerequisite: All lower level program prerequisites.
Principles and practices in making quantity surveys and labor estimates for construction projects. (Basic Estimating and Residential)

BCN 3762 - Construction Design & Codes (3)
Prerequisite: All lower level program prerequisites.
Exploration of building design and construction that conform to federal, state, county, and municipal codes, as well as the authority and responsibility vested in the several agencies. Research of the standard building codes required.

BCN 3782 - Introduction to Construction Computing (3)
Prerequisite: CGS 1100 or CGS 1570.
This course covers the study of application computer programs employed in the construction industry. Area of study include the Internet, construction scheduling, construction cost estimating, construction drawing.

BCN 4431 - Structural Systems (3)
Prerequisite: All lower level program prerequisites.

A study of the structural systems: beams, columns, rigid frames, arches, trusses, enclosures, and foundation configuration methods used in construction. Included are the advantages and limitations of using each structural system, and each materials selection.

BCN 4587C – Green Construction & Sustainability I (3)
Prerequisites: All lower level program prerequisites.
This is the first course in a two-course elective track for students specializing in green construction and sustainability. This course addresses the environmental impact of land development and construction. Topics include specific regulation affecting developers and construction managers, the environmental review of developments and methods to prevent or minimize the negative environmental impact of construction of construction and land development.

BCN 4591C - Mechanical & Electrical Systems (3)
Prerequisite: All lower level program prerequisites.
This course introduces students to the principles and current practices in the application of mechanical and electrical systems as described in divisions 14 (conveying equipment), 15 (mechanical systems), and 16 (electrical systems) in the Construction Specification Institute (CSI).

BCN 4594C - Green Construction & Sustainability II (3)
Prerequisites: All lower level program prerequisites.
This is the second course in a two-course elective track for students specializing in green construction and sustainability. This course addresses the environmental impact of land development and construction. Topics include specific regulation affecting developers and construction managers, the environmental review of developments and methods to prevent or minimize the negative environmental impact of construction of construction and land development.

BCN 4612 - Advanced Construction Estimating (3)
Prerequisite: BCN 3611.
Advanced techniques for estimating building construction. This course includes direct and indirect cost analysis for complicated construction systems, preparation of bid proposals, specifications, and other related documents. Students will be required to do projects using Excel spreadsheets.
BCN 4708 - Construction Documents/ Contract (3)
Prerequisites: BUL 3130 and all lower level program prerequisites.
A study of the legal and protective documentation used in the construction field. These documents include contracts, specifications, insurance and bonds.

BCN 4709 – Construction Management Capstone (3)
Co-requisite: BCN 4931.
This course is a senior capstone experience, providing an opportunity for students to control and coordinate construction projects and personnel in a service-learning environment. Students will apply their knowledge and skills in strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, and customer relations and communication.

BCN 4720 - Construction Project Planning & Scheduling (3)
Prerequisites: All lower level program prerequisites.
The application of the critical path method and program evaluation review technique to construction planning, scheduled vs. actual job expenditures, cost forecasting, and development of unit prices from field data.

BCN 4730 - Construction Safety (3)
Prerequisite: All lower level program prerequisites.
Construction safety issues, concerns, requirements and procedures. The analysis includes cost, planning, administration, inspection, prevention, loss control and a drug-free work place.

BCN 4751C - Housing & Land Development I (3)
Prerequisites: All lower level program prerequisites.
The application of the critical path method and program evaluation review technique to construction planning, scheduled vs. actual job expenditures, cost forecasting, and development of unit prices from field data.
BCN 4753 - Construction Administration & Economics (3)

Prerequisites: All lower level program prerequisites.

Nature of construction costs, funding sources and arrangements, capital requirements, bonding, insurance, risk and contingency evaluation, general office operations, and bidding procedure.

BCN 4758C - Housing & Land Development II (3)

Prerequisite: BCN 4720.

This is the second course in a two-course elective track for students preparing for careers in housing and land development. An analysis of land development via the multifaceted full delivery construction processing regarding the build environment will be covered. Emphasis is placed on project feasibility relative to site selection, site acquisition and permitting, value engineering and the construction loans process and funding requirements.

BCN 4801C - Industrial Construction I (3)

Prerequisites: All lower level program prerequisites.

This is the first course in a two-course elective track for students preparing for careers in industrial construction. All aspects of industrial construction practice are examined including: project management, strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, customer relations and communication.

BCN 4802C - Industrial Construction II (3)

Prerequisite: BCN 4720.

This is the second course in a two-course elective track for students preparing for careers in industrial construction. It is the second course in the industrial concentration. All aspects of industrial construction practice are examined including project management, strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, customer relations and communication.

BCN 4870C - Heavy Civil Construction I (3)

Prerequisites: All lower level program prerequisites.

This is the first course in a two-course elective track for students preparing for careers in heavy civil construction. Students learn a broad perspective of the technical knowledge and skill or methods related to heavy civil construction projects, including bridges, highways, tunnels, pump
stations, dams and underground utilities. This course prepares students to apply the latest heavy civil construction techniques.

BCN 4871C - Commercial Construction I (3)
Prerequisites: All lower level program prerequisites.
This is the first course in a two-course elective track for students preparing for careers in commercial construction. Students learn a broad perspective of the technical knowledge and skill or methods related to commercial construction projects, including project management, strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, customer relations and communication.

BCN 4872C - Heavy Civil Construction II (3)
Prerequisite: BCN 4720.
This is the second course in a two-course elective track for students preparing for careers in heavy civil construction. Students will apply their knowledge and skills in the management of heavy civil construction, including strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, customer relations and communication.

BCN 4873C - Commercial Construction II (3)
Prerequisite: BCN 4720.
This is the second course in a two-course elective track for students preparing for careers in commercial construction. Key aspects of commercial construction practice are examined including project management, strategic bidding and estimating, ethical conduct, project delivery methods, value engineering, design/build, customer relations and communication.

BCN 4900 - Directed Individual Study (3)
This course provides CM students the opportunity to study advanced construction topics or participate in a CM applied research program.

BCN 4930 – Special Topics: Seminars (3)
This course covers topics of current interest in the construction industry. Topics or focus may vary from semester to semester. This may be repeated up to 12 credit hours with a change in course content.
BCN 4931 - Seminars: Construction Management (1-3)

Prerequisite: Permission of Instructor. Co requisite: BCN 4709

This course offers advance study done within an area of specialization designed for the individual who desires a field of concentration. The course focuses on new information and technology in the construction industry. This course may be repeated when subject matter is different for a maximum of ten credit hours.

BCN 4944 - Construction Management Internship (3)

Prerequisite: BCN 3611C and permission of instructor.

Students must apply to internship at least one month prior to the semester they will register for internship. The course is designed as a culminating experience in construction management. This course allows the student an opportunity to practice acquired knowledge under careful observation and in cooperation with an experienced construction manager.

Upper Division Required Courses Outside Department

MAR 3023 - Principles of Marketing (3)

Prerequisites: ECO 2013 and ECO 2023; recommended perquisite SOP 3004.

An introduction to the process of planning market programs for goods and services. Techniques of analyzing the market and its environment are introduced as background for making decisions in product planning, promotion, distribution, and pricing.

BUL 3130 (3) - Legal Environment of Business

Introduction to law as it relates and impacts upon the operation of business. Consideration is given to the Uniform Commercial Code, antitrust, employment laws, business ethics, international law and the social and political environment in which a business operates.

Business Course Elective (3 CH – select one)

REE 4043 - Real Estate Analysis (3)

Decision-making process for development, financing, marketing, and management of real estate within the framework of our government, economic, legal, and social systems. The course meets
the content requirements of the Florida Real Estate Commission for obtaining a real estate license.

MAN 3025 Administrative Management of Business (3)
Recommended prerequisite: SOP 3004.
Fundamentals of management which permeate organizations. Includes introductory studies of administrative structure, organizational environment, and management functions and processes.

ACG 2071 Principles of Managerial Accounting (3)
Prerequisite: ACG 2021 and MAC 1105 or equivalents each with a grade of “C” or better.
Conceptual introduction to management accounting. Accounting for cost reporting and control. Reports, statements, and analytical tools used by management.

Lower Division Required Courses Outside Department

STA 2023 - G (M) Elementary Statistics for Business (3)
Prerequisite: MAC 1105 or MAC 1147.
This course is an introduction to descriptive data analysis, probability, statistical distributions, confidence intervals, testing of hypothesis, regression, and correlation. Topics selected to emphasize applications in a business environment.

ECO 2013 - Principles of Macroeconomics (3)
Introduction to the theory of income determination and national income accounting. Analysis of the use of monetary and fiscal policy to accomplish goals of full employment, economic growth and price stability.

ECO 2023 - Principles of Microeconomics (3)
Introduction to the market system, market structures, and the theory of production, demand theory and general equilibrium.

MAC 2233 - Calculus for Business (3)
Prerequisite: MAC 1105 or MAC 1147.
Topics in differential and integral calculus with applications.

PHY 2053 - Algebra-based Physics I (3)
Prerequisites: MAC 1105, MAC 1114 or MAC 1147 and high school physics with a minimum of a grade of “B” or PHY 1020C.
An introduction to mechanics, waves and heat.

PHY 2053L - Algebra-based Physics I Laboratory (1)
Co requisite: PHY 2053.
Laboratory exercises to accompany PHY 2053.

PHY 2054 - Algebra-based Physics II (3)
Phy 2053. Prerequisite: PHY 2053.
An introduction to electricity, magnetism, light and modern physics.

PHY 2054L - Algebra-based Physics II Laboratory (1)
Co requisite: PHY 2054.
Laboratory exercises to accompany PHY 2054.

CGS 1100 - Computer Applications for Business (3)
This course introduces the fundamentals of personal computing for business majors and other non-computer science majors. Topics include the Windows operating system, word processing, spreadsheets, database, presentation aids, internet, e-mail and related areas.

ENC 1101-G (W) College Writing (3)
This course is an introduction to writing at the college level.

LIT 2000 Introduction to Literature (3)
Prerequisite: ENC 1101.
This course provides an introduction to drama, fiction and poetry, with attention to interpretive strategies. Gordon Rule English Credit.

LIT 2932-G (W) Themes and Types in Literature (3)
Prerequisite: ENC 1101 and LIT 2000.
This course focuses on a theme or type chosen by instructor, with attention to the nature of the literary form. Gordon Rule English Credit.

General Education Humanities I (3 CH – select one)

EUH 1000 G (W) Freshman Core I (3)
First part of a two-term interdisciplinary survey course that combines Western civilization lectures with discussions of major works of Western culture. Students are encouraged to take both EUN 1000 and EUH 1001 but only one of the two courses is required of all freshmen. Gordon Rule Additional Writing credit.

EUH 1000 G (W) Freshman Core II (3)
Second part of a two-term interdisciplinary survey course that combines Western Civilization lectures with discussions of major works of Western culture. Students are encouraged to take both EUH 1000 and EUH 1001 but only one of the two courses is required of all freshmen. Gordon Rule Additional Writing credit.

General Education Humanities II (3 CH – select one)

PHI 2010 G (W) Introduction to Philosophy (3)
An introduction to the rudiments of philosophical thinking, which is designed to clarify the differences between philosophy and further human activities such as science and religion. The course will introduce students to a range of philosophical problems and methods. Gordon Rule Additional Writing credit.

SECTION III
PHI 2100 G (W) Reasoning/Critical Thinking (3)
Principles of sound reasoning, language analysis and definition, the logic of classes, and propositions and discussions of philosophical issues. Gordon Rule Additional Writing credit.

PHI 2630 G (W) Contemporary Ethical Issues (3)
An attempt to provide the student with a theoretical framework to approach the great moral issues of our time. Gordon Rule Additional Writing credit.

General Education Humanities III (3 CH – select one)

ARH 2000 Art Appreciation (3)
This course includes the study of visual elements, design principles, various techniques and media. Examples of Western painting, sculpture and architecture from prehistoric to present times will be examined. Local museum excursions required.

ARH 2050 Art History Survey I (3)
This course is a survey of painting, sculpture and architecture from the Paleolithic era through the medieval period. Monuments will be studied in relation to the cultural contexts of Western civilization.

MUH 2012 Enjoyment of Music (3)
An introduction to musical elements, forms, and style periods with emphasis on composers’ lives, individual styles and representative works. Designed to stimulate the student’s love of music and to create listening skills. Music will be studied from Medieval through 20th century periods.

MUH 2017 History and Appreciation of Rock (3)
A study of the origins and development of rock and roll music from rhythm and blues, country and western, to current trends in pop and rock. Aural recognition of representative recordings will be required.

MUH 2018 The Evolution of Jazz (3)
A historical survey of the evolution of jazz from primitive African elements through its fusion with Western hymns, work songs and military music. Various types of jazz will be studied from Dixieland through modern/contemporary jazz forms.

MUT 1111 Theory I (3)
Co requisite: MUT 1241.
The course consists of an introduction to the basics of music theory and the techniques and concepts of voice leading as practiced during the common practice period.

General Education Cultural Diversity (3 CH – select one)

ANT 2000 CD-Introduction to Anthropology (3)
An introduction to the critical issues in anthropology. The major subfields of archaeology, physical anthropology, linguistics, and cultural anthropology are examined for an understanding
of contemporary and past cultural issues such as the rise of civilization, origins of language, and the roots of social inequality.

ANT 2423 CD-Kinship and Family (3)
This course introduces students to the study of kinship and gender in an anthropological perspective. Topics covered include, but are not restricted to, gender distinctions, body images, descent, inheritance, courtship, love, marriage, family forms, kin networks, and new reproductive technologies. Students will be presented with detailed case studies both within and outside the Euro-American tradition.

ASN 2003 CD-Introduction to Asia (3)
An introduction to the history and culture of Asia. In addition to examining selected aspects of Asia’s past and present, we will also explore the problems of “Orientalism” and the historical standards employed in various chronicles of Asia.

GEO 2420 CD-Cultural Geography (3)
The analysis as they occur throughout the world. The major focus is on how diverse cultures organize themselves spatially to form diverse geographic areas.

MMC 2701 CD-Communicating Across Cultures (3)
This course will review the issues in effective cross-cultural communication, at the levels of both interpersonal communication and communication through the mass media. Students will be encouraged to explore their own cognitive barriers to communicating across cultures and ways to overcome those barriers.

PUP 2312 CD-Race/Gender/Politics (3)
This course introduces students to the struggle of minorities and women to participate in the formation of public policy in the United States.

REL 2300 CD-Comparative Religion (3)
Comparative religion first introduces students to the major religions of the world, and then seeks points of comparison between those religions in an effort to come to terms with the common bases of human religious experience.

2. Note and document any discrepancies between existing catalog descriptions and current course listings.

There are no discrepancies between existing catalog descriptions and current course listings.

3. Include, in Appendix B, a syllabus for each course taught by the construction unit. The syllabus should state the course objectives in relation to the program goals and objectives, outline instructional methods, and contain a topical outline.

Volume II Appendix B contains the CM course syllabi for each undergraduate course taught by the CM faculty.
J. Course Offerings

1. List the required courses taught by the construction unit. Indicate course number, title, number of sections per semester or quarter, and average enrollment per section for the most recent academic year.

Fig. 16: Required Course Offerings 2009/2010
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Sections</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 1210C</td>
<td>Construction Materials</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>BCN 1251</td>
<td>Construction Drawing</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>BCN 2280</td>
<td>Surveying: Construction Layout</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>BCN 2405</td>
<td>Introduction to Structures</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>BCN 3012</td>
<td>History &amp; Introduction to Construction</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3223</td>
<td>Soils and Foundations</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>BCN 3224</td>
<td>Construction Techniques</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>BCN 3611C</td>
<td>Construction Cost Estimating</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3762</td>
<td>Construction Design and Code</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3782</td>
<td>Introduction to Construction Computing</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>BCN 4431</td>
<td>Structural Systems</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>BCN 4594C</td>
<td>Green Construction &amp; Sustainability</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 4612</td>
<td>Advanced Construction Estimating</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 4708</td>
<td>Construction Documents &amp; Contracts</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>BCN 4709</td>
<td>Construction Project Management Capstone</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>BCN 4720</td>
<td>Construction Project Planning &amp; Scheduling</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 4730</td>
<td>Construction Safety</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>BCN 4753</td>
<td>Construction Administration &amp; Economics</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>BCN 4802C</td>
<td>Industrial Construction II TLO</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>BCN 4872C</td>
<td>Heavy Civil Construction II</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>BCN 4873C</td>
<td>Commercial Construction II</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 4900</td>
<td>Directed Individual Study</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>BCN 4931</td>
<td>Seminar: Const Management</td>
<td>1</td>
<td>46</td>
</tr>
<tr>
<td>BCN 4944</td>
<td>Construction Management Internship</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>BCN 1210C</td>
<td>Construction Materials</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 1251</td>
<td>Construction Drawing</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 2280</td>
<td>Surveying: Construction Layout</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 2405</td>
<td>Introduction to Structures</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>BCN 3012</td>
<td>History &amp; Introduction to Construction</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3224</td>
<td>Construction Techniques</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>BCN 3611C</td>
<td>Construction Cost Estimating</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>BCN 3762</td>
<td>Construction Design and Code</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3782</td>
<td>Introduction to Construction Computing</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>BCN 4431</td>
<td>Structural Systems</td>
<td>1</td>
<td>39</td>
</tr>
<tr>
<td>BCN 4591C</td>
<td>Mechanical and Electrical Systems</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>BCN 4612</td>
<td>Advanced Construction Estimating</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Units</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>BCN 4708</td>
<td>Construction Documents &amp; Contracts</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>BCN 4709</td>
<td>Construction Project Management Capstone</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>BCN 4720</td>
<td>Construction Project Planning &amp; Scheduling</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>BCN 4730</td>
<td>Construction Safety</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>BCN 4753</td>
<td>Construction Administration &amp; Economics</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>BCN 4931</td>
<td>Seminar: Const Management</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>BCN 4944</td>
<td>Construction Management Internship</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Summer 2009</strong></td>
<td></td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>BCN 1251</td>
<td>Construction Drawing</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>BCN 3102</td>
<td>History &amp; Introduction to Construction</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3224</td>
<td>Construction Techniques</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>BCN 3611C</td>
<td>Construction Cost Estimating</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>BCN 3762</td>
<td>Construction Design and Code</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>BCN 3782</td>
<td>Introduction to Construction Computing</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>BCN 4284</td>
<td>Surveying: Construction layout</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>BCN 4431</td>
<td>Structural Systems</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>BCN 4594C</td>
<td>Green Construction &amp; Sustainability</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>BCN 4708</td>
<td>Construction Documents/Contracts</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>BCN 4709</td>
<td>Construction Project Management Capstone</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>BCN 4753</td>
<td>Construction Administration &amp; Economics</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>BCN 4872C</td>
<td>Heavy Civil Construction II</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>BCN 4900</td>
<td>Directed Individual Study</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>BCN 4931</td>
<td>Seminar: Construction Management</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>BCN 4944</td>
<td>Construction Management Internship</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>
2. List the elective courses offered by the construction unit during the past two academic years. Indicate course number, title, number of sections per semester or quarter, and average enrollment per section.

Fig. 17: Elective Course Offerings
### Elective Courses

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>No. of Sections</th>
<th>Average Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spring 2010</strong></td>
<td>BCN 4594C</td>
<td>Green Construction &amp; Sustainability</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>BCN 4802C</td>
<td>Industrial Construction II</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>BCN 4872C</td>
<td>Heavy Civil Construction II</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>BCN 4873C</td>
<td>Commercial Construction II</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>BCN 4956</td>
<td>Study Abroad: Construction Mgt.</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td><strong>Fall 2009</strong></td>
<td>BCN 4587C</td>
<td>Green Construction and Sustainability I</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>BCN 4870</td>
<td>Heavy Civil Construction I</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>BCN 4900</td>
<td>Directed Individual Study</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>BCN 4871</td>
<td>Commercial Construction I</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>BCN 4990</td>
<td>Study Abroad: Egypt</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Summer 2009</strong></td>
<td>BCN 4594C</td>
<td>Green Construction and Sustainability II</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>BCN 4872C</td>
<td>Heavy Civil Construction II</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td><strong>Spring 2009</strong></td>
<td>BCN 3991</td>
<td>Experimental: Const Forensics II</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BCN 4594C</td>
<td>Green Const &amp; Sustainability II</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>BCN 4872C</td>
<td>Heavy Civil Construction II</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>BCN 4873C</td>
<td>Commercial Construction II</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>BCN 4930</td>
<td>Special Topics: Seminars</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>BCN 4990</td>
<td>Study Abroad: France</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td><strong>Fall 2008</strong></td>
<td>BCN 4587C</td>
<td>Green Construction &amp; Sustainability I</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>BCN 4594C</td>
<td>Green Const &amp; Sustainability II</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>BCN 4871C</td>
<td>Commercial Construction I</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>BCN 4900</td>
<td>Directed Individual Study</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>BCN 4990</td>
<td>Experimental: Construction Forensics I</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td><strong>Summer 2008</strong></td>
<td>BCN 4594C</td>
<td>Green Construction and Sustainability II</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>BCN 4900</td>
<td>Directed Individual Study</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**K. Supporting Disciplines**

1. List the required courses in the construction curriculum taught by other academic units. Indicate other disciplines that utilize the same course. (If widely used, indicate "all campus.")

Fig. 18: Supporting Disciplines

SECTION III
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Other Discipline Using Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENC 1101</td>
<td>College Writing</td>
<td>all campus</td>
</tr>
<tr>
<td>GEB 1011</td>
<td>Foundations of Business</td>
<td>all campus</td>
</tr>
<tr>
<td>PHY 2053</td>
<td>College Physics I</td>
<td>all campus</td>
</tr>
<tr>
<td>PHY 2053L</td>
<td>College Physics I Lab</td>
<td>all campus</td>
</tr>
<tr>
<td>PHY 2054</td>
<td>College Physics II</td>
<td>all campus</td>
</tr>
<tr>
<td>PHY 2054L</td>
<td>College Physics II Lab</td>
<td>all campus</td>
</tr>
<tr>
<td>CGS 1100</td>
<td>Computer Apps for Business</td>
<td>all campus</td>
</tr>
<tr>
<td>ECO 2013</td>
<td>Macroeconomics</td>
<td>all campus</td>
</tr>
<tr>
<td>LIT 2110</td>
<td>Introduction to Literature</td>
<td>all campus</td>
</tr>
<tr>
<td>STA 2023</td>
<td>Elementary Statistics for Business</td>
<td>all campus</td>
</tr>
<tr>
<td>LIT 2932</td>
<td>Themes &amp; Types in Literature</td>
<td>all campus</td>
</tr>
<tr>
<td>ACG 2021</td>
<td>Principles of Financial Accounting</td>
<td>all campus</td>
</tr>
<tr>
<td>ECO 2023</td>
<td>Principles of Microeconomics</td>
<td>all campus</td>
</tr>
<tr>
<td>MAC 2233</td>
<td>Calculus for Business</td>
<td>all campus</td>
</tr>
<tr>
<td>BUL 3130</td>
<td>Legal Environment of Business</td>
<td>all campus</td>
</tr>
<tr>
<td>MAR 3023</td>
<td>Principles of Marketing</td>
<td>all campus</td>
</tr>
<tr>
<td><strong>Business Elective</strong></td>
<td><strong>Choose 1</strong></td>
<td>---</td>
</tr>
<tr>
<td>REE 4043</td>
<td>Real Estate Analysis</td>
<td>all campus</td>
</tr>
<tr>
<td>MAN 3025</td>
<td>Admin. Management of Business</td>
<td>all campus</td>
</tr>
<tr>
<td>ACG 2071</td>
<td>Principles of Managerial Accounting</td>
<td>all campus</td>
</tr>
<tr>
<td><strong>General Education II</strong></td>
<td><strong>Choose 1</strong></td>
<td>---</td>
</tr>
<tr>
<td>EUH 1000</td>
<td>Freshman Core I</td>
<td>all campus</td>
</tr>
<tr>
<td>EUH 1001</td>
<td>Freshman Core II</td>
<td>all campus</td>
</tr>
<tr>
<td><strong>General Education II</strong></td>
<td><strong>Choose 1</strong></td>
<td>---</td>
</tr>
<tr>
<td>PHI 2010</td>
<td>Introduction to Philosophy</td>
<td>all campus</td>
</tr>
<tr>
<td>PHI 2100</td>
<td>Reasoning/ Critical Thinking</td>
<td>all campus</td>
</tr>
<tr>
<td>PHI 2630</td>
<td>Contemporary Ethical Issues</td>
<td>all campus</td>
</tr>
<tr>
<td><strong>General Education III</strong></td>
<td><strong>Choose 1</strong></td>
<td>---</td>
</tr>
<tr>
<td>ARH 2000</td>
<td>Art Appreciation</td>
<td>all campus</td>
</tr>
<tr>
<td>MUH 2012</td>
<td>Enjoyment of Music</td>
<td>all campus</td>
</tr>
<tr>
<td>MUH 2017</td>
<td>History and Appreciation of Rock</td>
<td>all campus</td>
</tr>
<tr>
<td>MUH 2018</td>
<td>The Evolution of Jazz</td>
<td>all campus</td>
</tr>
<tr>
<td>ARH 2050</td>
<td>Art History Survey I</td>
<td>all campus</td>
</tr>
<tr>
<td>MUT 1111</td>
<td>Theory I</td>
<td>all campus</td>
</tr>
<tr>
<td><strong>General Education CD</strong></td>
<td><strong>Choose 1</strong></td>
<td>---</td>
</tr>
<tr>
<td>ANT 2000</td>
<td>Introduction to Anthropology</td>
<td>all campus</td>
</tr>
<tr>
<td>GEO 2420</td>
<td>Cultural Geography</td>
<td>all campus</td>
</tr>
<tr>
<td>ANT 2423</td>
<td>Kinship and Family</td>
<td>all campus</td>
</tr>
</tbody>
</table>
2. Discuss the adequacy of the courses.

Courses by other academic units are adequate in terms of content and availability. The lower division courses are appropriate preparation for upper division courses.

3. Comments, if any.

None.
Section IV
IV. FACULTY

A. Current Staff

1. List the current faculty of the construction unit, including part-time and graduate instructors. List the full-time faculty first, grouped alphabetically within rank. Indicate the rank at the head of each group. Show the full-time equivalence (FTE) for each part-time faculty member (i.e., .25 for quarter-time). Indicate years on staff as of the end of the current academic year. Indicate tenure status and whether an academic year (9 mo.) or fiscal year (12 mo.) appointment.

Fig. 19: Current Faculty List 2009/2010.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>FTE</th>
<th>Highest Degree</th>
<th>Years on Staff</th>
<th>Tenured</th>
<th>Tenure Track</th>
<th>Non Tenure Track</th>
<th>9 Month</th>
<th>12 Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Professor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>J. David Lambert</td>
<td>1.0</td>
<td>Ph.D.</td>
<td>5</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mag Malek</td>
<td>1.0</td>
<td>Ph.D.</td>
<td>10</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>John Dryden</td>
<td>1.0</td>
<td>Ph.D.</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aiyin Jiang</td>
<td>1.0</td>
<td>Ph.D.</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Roberto Soares</td>
<td>1.0</td>
<td>Ph.D./MBA</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Carol Woodson</td>
<td>1.0</td>
<td>Ph.D.</td>
<td>2.5</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Instructor/Advisor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>James Source</td>
<td>1.0</td>
<td>MBA</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Adjunct</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tamara Baker</td>
<td>0.50</td>
<td>M.S./PE</td>
<td>9</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Michael Shabla</td>
<td>0.25</td>
<td>M.S./PE</td>
<td>2</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Floyd Simpson</td>
<td>0.25</td>
<td>M.S./PE</td>
<td>7</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Joseph Varon</td>
<td>0.25</td>
<td>M.S./PE</td>
<td>2</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

2. List the current support staff of the construction unit and their assignments. Include clerical staff, technicians, and non-teaching graduate assistants. Indicate the percentage of full-time employment.

Fig. 20: Current Support Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>% Full Time</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Becker</td>
<td>100 %</td>
<td>Office Manager</td>
</tr>
<tr>
<td>Student Office Assistants</td>
<td>75%</td>
<td>Office Assistant</td>
</tr>
<tr>
<td>Terry Smith</td>
<td>As Needed</td>
<td>Computing Support</td>
</tr>
<tr>
<td>Carrol Reilly</td>
<td>As Needed</td>
<td>Fiscal Management</td>
</tr>
</tbody>
</table>

B. Staff Assignment Definitions

Define what constitutes a full-time staff assignment in the construction unit. Discuss institutional regulations that influence this definition. Include formulas and load factors for various courses and other activities.

The CM Department adheres to guidelines and policies provided by the University and the Faculty Union agreement. A full-time faculty assignment is a forty-hour week divided between teaching, service, and research and scholarship. A CM faculty member is typically assigned three
three-credit courses per semester or 30 hours of effort per week. The balance of the time, 10 hours per week, is allocated to service, research, and scholarship. In summer, UNF looks to provide at least one three-credit course for those faculty who desire to teach as a salary supplement. Teaching loads may be reduced due to administrative assignments or faculty member buy out of a course.

C. Current Faculty Assignments

1. Provide data on faculty assignments for the most recent fall semester or quarter. List all faculty members, full-time and part-time, by name. For each faculty member indicate the courses taught, enrollment, and student credit hours (SCH). For each faculty member indicate the percent of time assigned to other activities and specify (i.e., administration, counseling).

Fig. 21: Current Faculty Assignments, Most Recent Fall Semester (2009)

<table>
<thead>
<tr>
<th>Name</th>
<th>Course</th>
<th>Enrollment</th>
<th>SCH</th>
<th>Other Assignments % Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. David Lambert</td>
<td>BCN 3012</td>
<td>38</td>
<td>3</td>
<td>20 %</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>BCN 3782</td>
<td>27</td>
<td>3</td>
<td>5 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4587C</td>
<td>34</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mag Malek</td>
<td>BCN 4900</td>
<td>2</td>
<td>3</td>
<td>50 %</td>
<td>Admin</td>
</tr>
<tr>
<td></td>
<td>BCN 4944</td>
<td>19</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BCN 4990</td>
<td>11</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Dryden</td>
<td>BCN 3611C</td>
<td>36</td>
<td>3</td>
<td>15 %</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>BCN 4612</td>
<td>28</td>
<td>3</td>
<td>10 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4709</td>
<td>28</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aiyin Jiang</td>
<td>BCN 4720</td>
<td>26</td>
<td>3</td>
<td>15 %</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>BCN 4720</td>
<td>31</td>
<td>3</td>
<td>10 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4870</td>
<td>19</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BCN 6728</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roberto Soares</td>
<td>BCN 1210C</td>
<td>38</td>
<td>3</td>
<td>15 %</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>BCN 3762</td>
<td>42</td>
<td>3</td>
<td>10 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4591C</td>
<td>23</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carol Woodson</td>
<td>BCN 4730</td>
<td>18</td>
<td>3</td>
<td>15 %</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>BCN 4730</td>
<td>20</td>
<td>3</td>
<td>10 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4708</td>
<td>26</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BCN 4871C</td>
<td>27</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>James Source</td>
<td>BCN 4753</td>
<td>25</td>
<td>3</td>
<td>60 %</td>
<td>Advising</td>
</tr>
<tr>
<td></td>
<td>BCN 4753</td>
<td>20</td>
<td>3</td>
<td>15 %</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>BCN 4931</td>
<td>25</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamara Baker</td>
<td>BCN 1251</td>
<td>35</td>
<td>3</td>
<td>50 %</td>
<td>Industry</td>
</tr>
<tr>
<td></td>
<td>BCN 2280</td>
<td>28</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Shabla</td>
<td>BCN 4431</td>
<td>40</td>
<td>3</td>
<td>75 %</td>
<td>Industry</td>
</tr>
<tr>
<td>Floyd Simpson</td>
<td>BCN 2405</td>
<td>32</td>
<td>3</td>
<td>75 %</td>
<td>Industry</td>
</tr>
<tr>
<td>Joseph Varon</td>
<td>BCN 3224</td>
<td>19</td>
<td>3</td>
<td>50 %</td>
<td>Industry</td>
</tr>
<tr>
<td></td>
<td>BCN 3224</td>
<td>17</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Mize</td>
<td>BCN 2280</td>
<td>16</td>
<td>3</td>
<td>75 %</td>
<td>Industry</td>
</tr>
</tbody>
</table>
D. Compensation

1. Provide data indicating the construction faculty salaries for the current year. Data that would reveal individual salaries may be omitted and provided directly to the visitation team. Indicate the average 9-month salaries by rank. Convert all 12-month salaries to 9-month salaries. Indicate the conversion factor from 12-month to 9-month salaries.

Fig. 22: Current Salary Data – 2009/2010

<table>
<thead>
<tr>
<th>Rank</th>
<th>No.</th>
<th>Average 9 Month Salary</th>
<th>No. Of 12 Month Appointments</th>
<th>No. Of Resignations in past 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Associate Prof.</td>
<td>2</td>
<td>$83,817.13</td>
<td>1</td>
<td>1 (transfer to CE)</td>
</tr>
<tr>
<td>Assistant Prof.</td>
<td>4</td>
<td>$65,750</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Instructor</td>
<td>1</td>
<td>$37,500</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

2. Briefly describe the benefits program for the faculty.

UNF benefits include:

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Insurance</td>
<td>Preferred Provider Organization (PPO) – Traditional Plan</td>
</tr>
<tr>
<td></td>
<td>Health Maintenance Organization (HMO) – Traditional Plan</td>
</tr>
<tr>
<td></td>
<td>Preferred Provider Organization (PPO) – Health Investor Health Plan</td>
</tr>
<tr>
<td></td>
<td>Health Maintenance Organization (HMO) – Health Investor Health Plan</td>
</tr>
<tr>
<td>Life Insurance</td>
<td>Group Life Insurance – Basic Life Insurance</td>
</tr>
<tr>
<td></td>
<td>Group Life Insurance – Optional Life Insurance</td>
</tr>
<tr>
<td>Dental Insurance</td>
<td>Dental HMO</td>
</tr>
<tr>
<td></td>
<td>Dental PPO</td>
</tr>
<tr>
<td></td>
<td>Dental Indemnity with PPO</td>
</tr>
<tr>
<td></td>
<td>Dental Indemnity</td>
</tr>
<tr>
<td>Reimbursement</td>
<td>Medical Reimbursement Account</td>
</tr>
<tr>
<td></td>
<td>Dependent Care Reimbursement Account</td>
</tr>
<tr>
<td></td>
<td>Limited Purpose medical Reimbursement Account</td>
</tr>
<tr>
<td></td>
<td>Health Savings Account</td>
</tr>
<tr>
<td>Supplemental Plans</td>
<td>Hospital Income</td>
</tr>
<tr>
<td></td>
<td>Cancer/Intensive Care</td>
</tr>
<tr>
<td></td>
<td>Accident/Disability</td>
</tr>
<tr>
<td></td>
<td>Vision Insurance</td>
</tr>
<tr>
<td>Optional Plans</td>
<td>Long term Disability</td>
</tr>
<tr>
<td></td>
<td>Long term Care</td>
</tr>
<tr>
<td></td>
<td>Life Insurance</td>
</tr>
<tr>
<td></td>
<td>Legal Insurance</td>
</tr>
<tr>
<td>Retirement Benefits</td>
<td>Florida Retirement Plan</td>
</tr>
<tr>
<td></td>
<td>Optional Retirement Plan</td>
</tr>
<tr>
<td></td>
<td>Tax Sheltered Annuities and Mutual Funds</td>
</tr>
</tbody>
</table>

3. Comments, if any.

None.

E. Evaluation and Promotion Policies

1. Faculty Evaluation

Describe the procedures for evaluating the faculty of the construction unit.

The CM Department adheres to the guidelines for faculty evaluation as negotiated between the University and the Faculty Union. The faculty annual evaluation covers teaching, scholarly works and service. The teaching component of the evaluation includes the results of the student course evaluations. Scholarly works includes peer-reviewed publications in forums such as:

- Project Management Journal
- Journal of Construction Education
- Journal of Construction Management and Economics
- Associated Schools of Construction Proceedings – both National and International
- The Journal of the American Institute of Constructors
- The American Professional Constructor

Other evaluation components include committee assignments, research grants, student club activities, etc.
2. Tenure and Promotion

*a. Indicate the number of current faculty members that have been promoted and/or achieved tenure during the past five years.*

<table>
<thead>
<tr>
<th>Current Rank</th>
<th>No. Promoted</th>
<th>No. Tenured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Associate Professor (1)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Instructor/Advisor</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 23: Promotion and Tenure

1. Dr. J. David Lambert was promoted to Associate Professor and was granted tenure by the Board of Trustees in July 2009.

*b. Briefly describe the tenure and promotion policies of the institution and the construction unit.*

With regard to Promotion and Tenure, the CM Department adheres to specified University guidelines as negotiated between the University and the Faculty Union. Namely:

**Promotion and Tenure Policies and Procedures**

Promotion and tenure awards are the University's major means for recognizing and protecting professional excellence in the academic disciplines.

In order to insure that academic excellence is consistently and regularly recognized, this document sets forth uniform promotion and tenure policies and procedures. They are designed to:

- maximize peer judgment within each academic discipline;
- provide a uniform, consistent method for arriving at promotion and tenure decisions;
- provide a clear statement of the standards by which the University awards promotion and tenure.

**Promotion Eligibility**

To be eligible to apply for promotion, a faculty member must have completed the following minimum number of years of full-time academic duties in rank (regardless of institution):
Instructor to Assistant Professor: 1 year
Assistant Professor to Associate Professor: 3 years
Associate Professor to Professor: 4 years

Credit for the number of years of full-time academic duties in rank shall be determined by the Vice President for Academic Affairs.

Evaluations of a candidate for promotion to any rank must give primary consideration to the candidate's performance of assigned duties and responsibilities. Those assignments should be made with full knowledge of the promotion and tenure guidelines set forth in this document. Administrators who seek promotion must do so on the basis of their teaching, scholarship, and service contributions, rather than on the basis of their administrative duties.

Qualified candidates must not be denied promotion on financial grounds.

**Minimum Qualifications for Promotion to Assistant Professor**

The candidate for promotion to Assistant Professor must hold the terminal degree appropriate to the academic discipline as determined by the Dean (or have completed a substantial portion of the work required for the terminal degree), or possess equivalent qualifications based on professional experience, and be otherwise qualified to perform assigned duties.

To be promoted from Instructor to Assistant Professor, a candidate must be demonstrably competent in teaching and must have shown some scholarly promise.

**Minimum Qualifications for Promotion to Associate Professor**

The candidate for promotion to Associate Professor must hold the terminal degree appropriate to the academic discipline as determined by the Dean or Director or possess equivalent professional qualifications in the field above those which would be equivalent to the terminal degree.

To be promoted from Assistant to Associate Professor a candidate must be excellent in teaching, excellent in scholarship as evidenced by an agenda of inquiry that has resulted in published
scholarly or creative works of high quality, and demonstrate continuing meaningful contributions in service.

**Minimum Qualifications for Promotion to Professor**

The candidate for promotion to Professor must hold the terminal degree appropriate to the academic discipline as determined by the Dean and be qualified for the rank of Associate Professor and, in addition, be an outstanding teacher, where "outstanding" is understood to be a consistent record of excellence over several years; and outstanding scholar as evidenced by an ongoing agenda of inquiry that has resulted in a body of published scholarly or creative works of high quality; and, demonstrate continuing meaningful contributions in service. A faculty member shall not be promoted to the rank of Professor without having achieved tenure, unless both actions occur simultaneously.

**Tenure Eligibility**

The faculty member's standard employment contract shall specify whether his/her position is a) tenured, b) non-tenure earning, or c) tenure earning. The initial contract shall also specify how much prior service in another institution is to be credited toward tenure.

The University President may grant up to two years' credit for prior service to faculty members hired at the Assistant Professor rank, up to three years' credit for faculty members hired at the Associate Professor rank, and up to four years credit for faculty members hired at the Professor rank. Tenure may be granted at the time of initial appointment subject to approval by the Board of Trustees. Prior to making an offer of tenure as a condition of employment, the Vice President for Academic Affairs will receive letters approving the tenured appointment from the department and college in which the candidate will be tenured.

Individuals with the rank of Assistant Professor, Associate Professor, or Professor are eligible for tenure. Tenure shall be in a department or other appropriate unit. Faculty members serving in appointed administrative positions may receive and retain tenure in the faculty classification but not in the administrative position.

An individual will normally be considered for tenure during the sixth year in which he/she holds a tenure-earning position at UNF, or in which he/she accumulates 6 years of credit for tenure. Where individuals are credited with tenure-earning service at the time of initial appointment, all
or a portion of such credit may be withdrawn once by the individual prior to formal application for tenure. In case of denial of tenure, the individual will be given a one academic year terminal contract. By the end of six (6) years of service at the University, an individual eligible for tenure must either be awarded tenure by the Board of Trustees or given notice that further employment will not be offered, beyond the one academic year terminal contract.

Evaluations of a candidate for tenure must give primary consideration to the candidate's performance of assigned duties and responsibilities. Those assignments should be made with full knowledge of the promotion and tenure guidelines set forth in this document.

In the case of administrative employees who may be eligible for tenure consideration, the following teaching conditions shall be met: 33.3 semester credit hours of regularly scheduled classes if the member's rank is below Professor or 20 semester hours of regularly scheduled classes if the member's rank is Professor.

Administrators who seek tenure must do so on the basis of their teaching, scholarship, and service contributions, rather than on the basis of their administrative duties.

Minimum Qualifications for Tenure

The candidate considered for tenure will normally hold the terminal degree in the field in which the member is teaching.

The decision to award tenure is the most significant decision that the University will make in regard to a faculty member. To be awarded tenure a candidate, during the course of his or her tenure-earning interval, must be excellent in teaching, excellent in scholarship as evidenced by an agenda of inquiry that has resulted in published scholarly or creative works of high quality, and must demonstrate continuing meaningful contributions in service.
Teaching, Scholarship and Service Evaluation Categories for Tenure and Promotion

Within the minimum qualifications for promotion and tenure outlined above, the following categories shall be examined by all committees and administrators involved in the University tenure and/or promotion process: teaching, scholarship and service. Except for accomplishments in the service category, a candidate shall be evaluated only on accomplishments related to the candidate's academic discipline.

Teaching

All committees and administrators evaluating the candidate must consider the following categories:

- the presentation of the University's curriculum in lecture, seminar, laboratory, studio, practicum, or independent study courses;
- the development of new courses, degree programs, and other efforts to improve and enhance the University's curriculum;
- academic and career advisement, if part of the candidate's assigned duties
- also to be considered are evaluations of the candidate's teaching by students and academic colleagues through University sanctioned methods such as survey instruments, questionnaires, and in-class visitations, observations and interviews; and
- in addition, administrators and committees shall consider any other relevant information in the dossier concerning teaching ability and accomplishments, such as awards or other formal recognition for outstanding teaching, grants or financial aid obtained for innovation and experimentation in teaching, and so forth.

Scholarship

Scholarly activities to be considered include the following:

- published scholarly or creative works (or works completed and accepted for publication), within or directly related to the candidate's academic discipline:
- scholarly monographs, editions, creative work, textbooks, bibliographies, or translations of books; edited collections of articles, readings, stories, etc.; and/or refereed articles or short creative works in journals, magazines, or anthologies;
• the presentation of refereed scholarly papers within or related to the candidate's academic discipline;

• the presentation of invited papers within or related to the candidate's academic discipline;

• grants or fellowships received in support of creative or scholarly work, or teaching or curriculum improvement;

• book reviews, non-refereed articles, and non-refereed papers, within the discipline;

• completed artistic performances, creations, and exhibitions; and

• work in progress.

Service

University Service includes service to the candidate's department, college and to the University at large, on elected or appointed committees; or through organizing and expediting meetings, conferences, workshops, and symposia; or otherwise.

Professional Service includes contributions to scholarly organizations dedicated to the development and support of the candidate's academic discipline. Professional service activities include the following:

• elected officer in local, state, and national discipline-oriented organizations;

• service other than officer-ship to such organizations;

• all activities other than teaching and scholarship which directly support the candidate's academic discipline; and

• service to public schools.

Community Service category includes those community activities to which the candidate makes a contribution by virtue of professional expertise. The only community service activities relevant to tenure or promotion candidacy are those related to the faculty member's professional expertise. Such activities include the following:
• membership and active participation in elected or appointed public, civic, or community
groups, boards, agencies and commissions dealing with issues related to the candidate's
professional expertise;

• membership and active participation in voluntary public, civic, or community groups,
boards, agencies, and commissions dealing with issues related to the candidate's professional
expertise; and

• any other community activities in which the University is represented by virtue of the
candidate's professional expertise.

F. Professional Development

Discuss institutional and departmental policies related to:

1. Consulting.
University regulations provide for a limited amount of release time for consulting activities. A
faculty member who intends to consult must file and receive approval on an “Outside
Employment Request”.

2. Professional associations.
The University and CM Department actively encourage faculty to join and participate in various
professional associations.

3. Publications.
The University strongly encourages faculty scholarly works as part of the promotion and tenure
process. The CM Department strongly encourages the faculty to strive for approximately two
peer-reviewed publications per year.

4. Research.
The University is primarily a teaching oriented institution. However, the University encourages
faculty members to conduct research. The primary objective is to provide undergraduates with a
research experience. Dr. Lambert and Dr. Jackson have active research programs. New CM
faculty members are exploring research opportunities.

5. Continuing education.
The University has a strong Continuing Education program. The CM Department encourages
CM faculty to participate in this activity. CM has posted courses but enrollments were
insufficient.

The CM Department encourages faculty to participate in continuing education. The Provost
office and the CM Department together provide travel funds for at least one trip per academic
year. Funds permitting, additional travel and conference attendance are supported. Faculty
members are also encouraged to pursue various certifications such as LEEDS.
Section V
V. STUDENTS

A. Admission Standards and Procedures

1. Describe standards and procedures for the admission of students to the construction program. Differentiate, if necessary, between freshmen, external transfers, and internal transfers.

Admission to UNF’s Construction Management program is a two-step process. The student must first be admitted to UNF university and then to the Construction Management academic program. The Construction Management program only admits students after they have completed all Lower Division requirements. Thus, students are admitted to the Construction Management program in their junior year.

Admission to UNF

Students who have completed an Associate of Arts degree at a Florida public university or community or junior college with a minimum of 60 semester hours may be considered for admission. A transfer student must have a cumulative college average of C or higher at the last college attended. The transfer student must also meet the Construction Management prerequisites. Other requirements include passing the College Level Academic Skills test, satisfaction of the statewide foreign language requirement if applicable, and satisfying the Gordon Rule on College Level Communications and Computation Skills.

Admission to Construction Management

The UNF Construction Management academic program does not admit students until they have junior standing (Upper Division) and have met all course prerequisite requirements. It is recommended that students complete their Lower Division course requirements at a community college. In the case of prerequisite construction courses (BCN prefix), it is a requirement that they be completed at the community college. The UNF CM academic program does not typically offer these prerequisite BCN courses. The following guidelines and requirements are provided to prospective CM students.

Program Of Study At The Community College

The UNF CM program of study assumes completion of the Associate of Arts (AA) degree at the community college. Some courses required for the major may also meet General Education Requirements thereby transferring maximum hours to UNF. If you transfer without an AA degree and have less than 60 semester hours of acceptable credit, you must meet entering freshman requirements.

*P - Prerequisite courses are lower-level courses that are required for preparation for the university major and must be taken at a community college or, in a university lower division program prior to a student receiving a baccalaureate degree from UNF. It is preferred that these prerequisites be completed in the freshman and sophomore years.

All prerequisites required courses must be completed with a grade of “C” or better.
(*P) ACG 2021 (3) Principles of Financial Accounting
(*P) STA 2023 (3) G (M) Elementary Statistics for Business
(*P) ECO 2013 (3) Principles of Macroeconomics
(*P) BUL 3130 (3) The Legal Environment of Business
(*P) MAC 2233 (3) Calculus for Business
(*P) BCN 1210 (3) Construction Materials
(*P) BCN 1252 (3) Construction Drawing I
(*P) BCN 2405 (3) Introduction to Structures
(*P) PHY 2053 (3) College Physics I
(*P) PHY 2053 L (1) College Physics I Lab
(*P) PHY 2054 (3) College Physics II
(*P) PHY 2054 L (1) College Physics II Lab
(*P) CGS 1100 (3) Computer Applications for Business (or another Computer Course with CGS prefix)
(*P) ECO 2023 (3) Microeconomics

2. Describe the philosophy of the construction program related to transfer credits, substitutions for required courses, and advanced standing for transfer and special students.

Any student graduating with an Associate of Arts degree from a community college in Florida will be accepted by four-year state university. The State of Florida has a common course numbering system. A course taken at another state community college or university with the same UNF course number will be accepted by UNF. The State of Florida also requires all students in the State University System to take essentially the same courses as freshmen and sophomores, Lower Division. There can be some variance in the courses taken depending on the field of study a student has chosen.

The CM Advisor meets with each new transfer student to validate those courses that will be accepted by the CM academic program. If the course has the same course number from another Florida state institution, it is automatically accepted with 2.0 GPA or better.

In some cases, a transfer student may have had a comparable course at another institution. The transfer student must provide the CM Advisor sufficient information such as a syllabus in order to determine if the given CM course educational objectives have been met. The CM Advisor also seeks advice from the CM faculty member teaching in the subject area if there is any question. If the CM course educational objectives have been met, the transfer student may receive credit on his/her Program of Study. Substitutions for required courses are generally not done. There must be some unusual circumstance to consider taking this action. In addition, the CM program does not recognize “advanced standing for transfer and special students”.

3. Describe the control the construction unit has over the quantity and quality of new students.

The CM Department has limited control over the quantity and quality of new CM students who enter Upper Division. This control comes from University admission standards and requirements of the CM program. The CM academic program is an open enrollment program.
PROGRAM OF STUDY AT THE COMMUNITY COLLEGE

Prerequisites
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACG 2021</td>
<td>3</td>
<td>Financial Acc</td>
</tr>
<tr>
<td>STA 2023</td>
<td>3</td>
<td>Elem Stats-Bus</td>
</tr>
<tr>
<td>ECO 2013</td>
<td>3</td>
<td>Macroeconomics</td>
</tr>
<tr>
<td>ECO 2023</td>
<td>3</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>BUL 3130</td>
<td>3</td>
<td>Legal Environ Of Bus</td>
</tr>
<tr>
<td>MAC 2233</td>
<td>3</td>
<td>Calc for Bus</td>
</tr>
<tr>
<td>BCN 1210c</td>
<td>3</td>
<td>Const Materials</td>
</tr>
<tr>
<td>BCN 1251</td>
<td>3</td>
<td>Const Drawing</td>
</tr>
<tr>
<td>BCN 2405</td>
<td>3</td>
<td>Intro to Structures</td>
</tr>
<tr>
<td>PHY 2053</td>
<td>3</td>
<td>College Physics I</td>
</tr>
<tr>
<td>PHY 2053 L</td>
<td>1</td>
<td>College Physics I Lab</td>
</tr>
<tr>
<td>PHY 2054</td>
<td>3</td>
<td>College Physics II</td>
</tr>
<tr>
<td>PHY 2054 L</td>
<td>1</td>
<td>College Physics II Lab</td>
</tr>
<tr>
<td>CGS 1100 or approved Computer Course with CGS prefix</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CORE BCM CLASSES AT UNF (52 SEMESTER HOURS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 2280</td>
<td>3</td>
<td>Survey: Const Layout</td>
</tr>
<tr>
<td>BCN 3782</td>
<td>3</td>
<td>Introduction to Construction Computing</td>
</tr>
<tr>
<td>BCN 3012</td>
<td>3</td>
<td>History of Construction</td>
</tr>
<tr>
<td>BCN 3223</td>
<td>3</td>
<td>Soils &amp; Foundations</td>
</tr>
<tr>
<td>BCN 3762</td>
<td>3</td>
<td>Bldg Const Design/Codes</td>
</tr>
<tr>
<td>BCN 3611</td>
<td>3</td>
<td>Const Cost Estimating</td>
</tr>
<tr>
<td>BCN 4753</td>
<td>3</td>
<td>Construction Administration &amp; Economics</td>
</tr>
<tr>
<td>BCN 4591c</td>
<td>3</td>
<td>Mechanical &amp; Electrical Systems</td>
</tr>
<tr>
<td>BCN 3224</td>
<td>3</td>
<td>Superstructures</td>
</tr>
<tr>
<td>BCN 4708</td>
<td>3</td>
<td>Const Documents/Contracts</td>
</tr>
<tr>
<td>BCN 4431</td>
<td>3</td>
<td>Structural Systems</td>
</tr>
<tr>
<td>BCN 4709</td>
<td>3</td>
<td>Construction Management Capstone</td>
</tr>
<tr>
<td>BCN 4720</td>
<td>3</td>
<td>Construction Scheduling</td>
</tr>
<tr>
<td>MAR 3023</td>
<td>3</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BCN 4612</td>
<td>3</td>
<td>Advance Cost Estimating</td>
</tr>
<tr>
<td>BCN 4730</td>
<td>3</td>
<td>Construction Safety</td>
</tr>
<tr>
<td>BCN 4931</td>
<td>1</td>
<td>Seminars: Construction Management</td>
</tr>
<tr>
<td>BCN 4944</td>
<td>3</td>
<td>Const Management Internship</td>
</tr>
</tbody>
</table>

Business Elective (3 SEMESTER HOURS):
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACG 2071</td>
<td>3</td>
<td>Principles of Managerial Accounting</td>
</tr>
<tr>
<td>MAN 3025</td>
<td>3</td>
<td>Administrative Management</td>
</tr>
<tr>
<td>REE 4043</td>
<td>3</td>
<td>Real Estate Analysis</td>
</tr>
</tbody>
</table>

BCM Elective Courses (6 SEMESTER HOURS):

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 4751c</td>
<td>3</td>
<td>Housing and Land Development I</td>
</tr>
<tr>
<td>BCN 4578c</td>
<td>3</td>
<td>Housing and Land Development II</td>
</tr>
<tr>
<td>BCN 4578c</td>
<td>3</td>
<td>Green Const/Sustainability I</td>
</tr>
<tr>
<td>BCN 4594c</td>
<td>3</td>
<td>Green Const/Sustainability II</td>
</tr>
<tr>
<td>BCN 4872c</td>
<td>3</td>
<td>Heavy Civil Construction I</td>
</tr>
<tr>
<td>BCN 4873c</td>
<td>3</td>
<td>Heavy Civil Construction II</td>
</tr>
<tr>
<td>BCN 4871c</td>
<td>3</td>
<td>Commercial Construction</td>
</tr>
<tr>
<td>BCN 4873c</td>
<td>3</td>
<td>Commercial Construction II</td>
</tr>
</tbody>
</table>

- All courses must be completed with a “C” or better.
- All lower-level prerequisites must be completed before any upper-level BCN classes are attempted.
- Students must pass or meet exemption criteria for all sections of the CLAST prior to earning AA and completing 60 semester hours.
- A student may receive credit for a course only once. However the GPA will reflect all repeated courses.
- This program includes a minimum of 58 upper-division semester hours.
- Students should make periodic appointments with the BCM advisor to assess their academic progress.
- For substitution/waiver see advisor.
- An approved enrollment form is required prior to registering for courses at another institution.
- Students are strongly advised not to enroll in courses at another institution during their last semester at UNF.
- Graduation will most likely be delayed for students who do attempt dual enrollment in their last semester.
BCM PROGRAM TOTAL IS 61 UPPER DIVISION SEMESTER HOURS
**Internship can be taken for up to 6 credit hours 3 for internship and 3 for a concentration selection. An extra concentration class can also be taken to take the place of one concentration selection**

4. Comments, if any.

None.

B. Quality of New Students

1. Indicate the quality of the new students for the most recent full year. Show the average values.

   **Fig. 24: Quality of New Students for 2009-2010**

<table>
<thead>
<tr>
<th>2009 /2010</th>
<th>SAT Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Verbal</td>
</tr>
<tr>
<td>Beginners</td>
<td>533</td>
</tr>
<tr>
<td>Internal Transfers</td>
<td>549</td>
</tr>
<tr>
<td>External Transfers</td>
<td>478</td>
</tr>
<tr>
<td>TOTAL</td>
<td>529</td>
</tr>
</tbody>
</table>

2. Comments, if any.

None.
C. Enrollment Data

1. Indicate the total number of students enrolled in the construction program during the fall semester or quarter for the past five years.

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Juniors</td>
<td>101</td>
<td>117</td>
<td>179</td>
<td>164</td>
<td>126</td>
</tr>
<tr>
<td>Seniors</td>
<td>74</td>
<td>70</td>
<td>91</td>
<td>108</td>
<td>91</td>
</tr>
<tr>
<td>Total Undergraduates</td>
<td>175</td>
<td>187</td>
<td>270</td>
<td>272</td>
<td>217</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Masters</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Doctoral</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total All Students</td>
<td>175</td>
<td>187</td>
<td>270</td>
<td>272</td>
<td>217</td>
</tr>
</tbody>
</table>

*The above table does not show any enrollment for freshmen and sophomores because Construction Management is declared at the junior year.

2. Provide tabular data that indicate the approximate number of full-time and part-time undergraduate students for the fall semester or quarter for the past five years. Define the institution's method of accounting for part-time students.

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time Juniors</td>
<td>26</td>
<td>19</td>
<td>34</td>
<td>49</td>
<td>47</td>
</tr>
<tr>
<td>Full-time Juniors</td>
<td>75</td>
<td>98</td>
<td>145</td>
<td>115</td>
<td>89</td>
</tr>
<tr>
<td>Part-time Seniors</td>
<td>32</td>
<td>19</td>
<td>22</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Full-time Seniors</td>
<td>42</td>
<td>51</td>
<td>69</td>
<td>84</td>
<td>70</td>
</tr>
<tr>
<td>Total Undergraduates</td>
<td>175</td>
<td>187</td>
<td>270</td>
<td>272</td>
<td>217</td>
</tr>
</tbody>
</table>

A full time student is one who takes at least 12-credit semester hours or more.

3. Comments, if any.

None.

D. Grading System

1. Briefly describe the institution's grading system.
Students are graded on a 4.0 scale. Graduation of point awards (GPA) is as follows:

\[ A = 4.0; \ A- = 3.7; \ B+ = 3.3; \ B = 3.0; \ B- = 2.7; \ C+ = 2.3; \ C = 2.0; \ D = 1.0; \ F = 0.0. \]

2. **Describe any special grade requirements established by the construction unit.**

CM students must satisfactorily pass all prerequisites and core courses with a “C” or better.

3. **Describe the institution's procedure for recognizing academic excellence.**

**Dean’s List**
Students in Upper Division who have completed 15 CH at UNF and have taken at least 9 CH and earned a GPA of 3.5 or higher are placed on the Dean’s List and receive a letter from the Dean.

**Spring Convocation - CM Awards for Academic Excellence**
Construction Management students with the highest GPAs are awarded Academic Excellence certificates at the CCEC Spring Recognition Event. Spring 2010 award recipients were Zachary George Farley, Michael Francesco Lambraia, and Matthew David Young. Spring 2009 recipients were Cory Addison Cutlip, Justin Tyler Foster, Antonio Francesco Franzese, and Vincent Maxwell Gazzo.

**CM Sigma Lambda Chi Honor Society Spring 2010 Inductees**
Derek Hedman- *President*, Christine Short- *Vice President*, Kyle Boivin- *Treasurer*, Kyle Allen, Joseph D'Acquisto, Brandon Facini, Lauren Iglio, Ryan Kirk, Kaitlin Knox, Paul Ly, Jeffrey McFarland, Van Morgan, Brian Mulvaney, Joseph Shepard, Ryan Stallings

4. **Describe the institution's procedure related to poor student performance - probation, suspension, and readmission.**

Undergraduate students who fail to earn a cumulative or term average of 2.0 GPA after attempting a cumulative total of 15 CH or more will be placed on academic probation and be referred to the academic Advisor. If the cumulative and/or term average fall below 2.0 during the next term of enrollment, the student may be suspended and be denied the opportunity to re-enroll for two semesters. The Advisor and Chair meet and review students so designated. The student is usually asked to visit with the Advisor in an attempt to gain an understanding of the particular situation. The action taken will be a suspension or one more semester of probation. Suspended CM students who desire to be readmitted may do so upon the written recommendation of the Advisor and the Chair.

5. **Comments, if any.**

None.
E. Academic Success and Failure

1. Indicate the number and percentage of the students that were on the honor roll during the past year.

Fig. 26: CM Honor Roll Students 2009-2010.

<table>
<thead>
<tr>
<th>2009-2010</th>
<th>Summer 2009</th>
<th>Fall 2009</th>
<th>Spring 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Juniors</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Seniors</td>
<td>1</td>
<td>1.03%</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>1.03%</td>
<td>2</td>
</tr>
</tbody>
</table>

2. Indicate the number and percentage of students that were on academic probation during the past year.

Fig. 27: CM Probation Students 2009-2010.

<table>
<thead>
<tr>
<th>2009-2010</th>
<th>Summer 2009</th>
<th>Fall 2009</th>
<th>Spring 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Juniors</td>
<td>6</td>
<td>7.50%</td>
<td>11</td>
</tr>
<tr>
<td>Seniors</td>
<td>3</td>
<td>3.09%</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>10.59%</td>
<td>15</td>
</tr>
</tbody>
</table>

3. Indicate the number and percentage of students that were lost due to dismissal, withdrawal from the institution, or transfer to another program during the past year. Do not include graduates.

Fig. 28: Attrition 2009-2010

<table>
<thead>
<tr>
<th>2009-2010</th>
<th>Summer 2009</th>
<th>Fall 2009</th>
<th>Spring 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Junior</td>
<td>4</td>
<td>4.21%</td>
<td>5</td>
</tr>
<tr>
<td>Senior</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>4.21%</td>
<td>5</td>
</tr>
</tbody>
</table>

4. Comments, if any.

None.

F. Record Keeping

1. Describe the academic record-keeping procedures of the construction unit, including the final graduation audit. Include, in the appendix, a copy of principal forms used.
The CM Advisor keeps CM student folders. In conjunction with these records, the University Registrar’s office maintains an online student database.

A student prepares a Program of Study (POS) with the Advisor upon entering Upper Division. The student then periodically meets with the Advisor during the course of his/her academic program to validate that he/she is progressing satisfactorily. At the end of the academic program, the student submits a graduation application to the Registrar’s Office. The Registrar’s Office provides a Certification of Completion of Requirements to the Advisor. The Advisor performs a detailed analysis of the student’s academic record to ensure conformance to POS requirements. The Certification is then submitted to the Chair and Dean for review and approval signature for those students who have met the POS requirements. The Certification is then returned to the Registrar’s Office.

Elements of the on-line Program of Study for a particular CM student are shown in the following figure. Note the Certification of Completion of various program requirements.
Program Evaluation

College of Computing, Engineering, and Construction - Bachelor of Science (120 credit hours)

- All course work must be completed with a grade of 'C' or better, unless otherwise noted.
- UNF GPA of 2.0 or better is required for graduation.

<table>
<thead>
<tr>
<th>Program</th>
<th>CCEC Bachelor of Science</th>
<th>Catalog Term</th>
<th>Spring 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>Computing, Engng, and Const</td>
<td>Evaluation Term</td>
<td>Spring 2009</td>
</tr>
<tr>
<td>Degree</td>
<td>Bachelor of Science</td>
<td>Request Number</td>
<td>56</td>
</tr>
<tr>
<td>Level</td>
<td>Undergraduate</td>
<td>Results as of</td>
<td>Apr 30, 2009</td>
</tr>
<tr>
<td>Majors</td>
<td>Building Construction</td>
<td>Concentrations</td>
<td></td>
</tr>
<tr>
<td>Departments</td>
<td>Building Construction Mgmt</td>
<td>Minor</td>
<td></td>
</tr>
</tbody>
</table>

Area: CLAST exam requirement - Met

Description: Degree-seeking students pursuing a first bachelor’s degree must pass or meet exemption criteria for all four subtests of the CLAST exam prior to earning 60 semester hours.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule</th>
<th>Subject Attribute Low</th>
<th>High Required</th>
<th>Required Term</th>
<th>Subject Course Title</th>
<th>Attribute Credits Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>ENGL3101 CLAST English requirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>997</td>
</tr>
<tr>
<td>Yes AND</td>
<td>ESSAY CLAST Essay requirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>997</td>
</tr>
<tr>
<td>Yes AND</td>
<td>MATH1111 CLAST Math requirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>997</td>
</tr>
<tr>
<td>Yes AND</td>
<td>READK10 CLAST Reading requirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>997</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total credits and GPA</td>
</tr>
</tbody>
</table>

Area: Building Construction Core - Met

Description: Building Construction Core (19 courses - 55.0 semester hours)

Note: BCN 4944 - Internship students will work with internship faculty advisor to secure their internship placement. Students must have a grade of 'C' or better prior to the first day of class.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule</th>
<th>Subject Attribute Low</th>
<th>High Required</th>
<th>Required Term</th>
<th>Subject Course Title</th>
<th>Attribute Credits Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>BCN3002 History of Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN3223 Soils and Foundations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN3224 Soils and Foundations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN36511 Concrete Cost Estimating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN3762 Building Cost Estimating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN3782 Intro to Construction Computing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4304 Surveying: Construction Layout</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4311 Structural Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4591C Mechanical &amp; Electrical Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4662 Advanced Construction Estimating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4708 Construction Documentation/Contracts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4709 Construction Project Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4720 Construction Project Planning/Scheduling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4730 Construction Safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4773 Construction Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4931 Seminar: Construction Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>BCN4944 Construction Management Internship (3-Shr)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Yes AND</td>
<td>SELECT 2 courses for a concentration:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total credits and GPA</td>
</tr>
</tbody>
</table>

Section V
2. Describe the interface with the institutional record-keeping system.

The student records are maintained on the university database. The CM Advisor has access to all the student records including the individual student Program of Study. Students also have access anytime to their individual Program of Study.

3. Comments, if any.

None.

G. Academic Advisement

1. Describe the academic advisement procedure used by the construction program.

When a student enters the University and is interested in the CM academic program, the student’s transcripts are provided to the Advisor. The Advisor and the student meet to prepare a Program of Study. The student and the Advisor meet periodically over the course of Upper Division to ensure the student is on track in their academic program. The intent is to have a CM student meet a minimum of three times with the Advisor in Upper Division.

The Chair also receives a listing of freshmen and sophomores who have declared an interest in the CM academic program. The Chair emails the Lower Division students the CM Advising Brochure and recommends they visit the CM Advisor to prepare a Preliminary Program of Study. This activity is optional on the part of the student.

The CM Advising Brochure is also available to all students via the CM web site: http://www.unf.edu/ccec/bcm/academics/.

2. List the faculty members who are serving as academic advisors, and indicate the number of students assigned to each.

There are no faculty members formally assigned as student advisors. The University provides professional advisors for both Lower Division and Upper Division. Mr. James Sorce, Advisor/Instructor, serves as Advisor for the CM academic program. As a member of the CM faculty, he maintains a close and continuous relationship with other CM faculty through such activities as departmental meetings, individual discussions on semester course scheduling, and dealing with various student situations.

CM students do interact informally with CM faculty on matters such as career options and employment considerations.

3. Comments, if any.

None.
H. Student Activities

1. List the student organizations that are sponsored by the construction unit and/or are primarily for construction students. Include the organization name, the approximate number of members or participants, and a brief statement of purposes and/or activities.

The CM Department had ~217 Upper Division Students in 2009/10. Many of these students were active in some of the following CM Department sponsored activities.

Student Clubs:
Professional Associations
Associated General Contractors – Dr. John Dryden, Advisor
Construction Management Association – Dr. Carol Woodson, Advisor
Construction Specification Institute – N/A
National Association of Home Builders – Mr. James Sorce, Advisor
Honorary Society
Sigma Lambda Chi - Dr. Mag Malek, Advisor

Student Design Competitions:

The UNF Construction Management NAHB team attended the January 2010 National Residential Competition at the International Builder’s Show in Las Vegas. Prior to the team’s departure, Mr. James Sorce invited industry representatives, Lee Arsenault, Bill Wilson, Dennis Gineder, Sean Junker, Jon Roberts, Greg Matovina, and Glenn Layton to pre-judge the team’s entry. The following students participated in the competition: Joseph D’Aquisto, Joseph (Scott) Shepard, Benjamin Cashen, David Blackwelder, Eric Shiendling, Ryan Kirk, Tim Olcott, Ryan Stallings and Henry Jude Alsandor. The following article is from the Spring 2009 Construction Management Newsletter and features the January 2009 CM team:

STUDENT COMPETITION – The National Association of Home Builders (NAHB) Construction Management Team placed in the top third out of 40 teams in the National Residential Competition at the International Builder’s Show in Las Vegas, January 2009. The team developed a management proposal including an estimate, schedule, cash-flow forecast, and a marketing plan for a real project, the Villas at Silverado Hills in San Antonio, TX, a Centex development. Congratulations to team leader Ryan Parker, and the entire team (in photo above), Construction Management Students David Auld, Benjamin Cashen, Vincent Gazzo, Jeffrey Hoelzer, and Geoffrey Tucker. Mr. James Sorce served as the Construction Management Department team advisor.
Service Learning:

Container Project – Spring 2010 - Construction Management students in Dr. Mag Malek’s Industrial Construction II TLO class are applying their knowledge and skills to the task of refurbishing, modifying, and transforming surplus shipping containers to serve a myriad of purposes such as pavilions, affordable housing, shelters, classrooms and libraries. This community-based learning project, supported partially with funds from UNF’s Transformational Learning Opportunity (TLO) program, affords students an opportunity to learn from and work with professionals in the industry who have experience with this form of construction. In managing and executing this project, and building a final product that will be used to meet a community need, the students will develop and strengthen their community engagement skills.

Jacksonville National Cemetery – Spring 2010 - Construction Management students will work with the North Jacksonville Rotary Club on an educational center at the Department of Veterans Affairs-owned Jacksonville National Cemetery. This community service project will serve as the CM Capstone project in which students will develop their budgeting and scheduling experience as they work with industry leaders. Students have already developed conceptual designs and budgets for the 10,000 square foot building.

Job Fairs:

The College of Computing, Engineering and Construction Spring 2010 Employer Showcase was held on March 9 in the UNF Student Union ballroom. Thirty construction, engineering and computing employers attended the Showcase. This biannual recruiting event is the premier-networking event for students, construction industry project managers, human resources representatives and principals of computing, engineering and construction firms. 280 CCEC students and alumni attended the event. Some of the employers represented during the Fall 2009 and Spring 2010 Showcase are:

- Ajax Building Corporation
- Archer Western Contractors
- Baker Concrete Construction
- Barton Malow
- Batson-Cook Company
- BE&K
- Danis Construction
- Elkins Constructors, Inc.
- FL Dept. of Transportation
- Gilbane Building Company
- Golder Associates Inc.
- HabiJax
- Haskell
- HDR Engineering
- Hensel Phelps Construction Company
- Kiewit Southern Co.
- Lender Processing Services
- Lennar Homes
- Manson Construction
- NAVAIR/U.S. Navy
Field Trips:

Dr. Aiyin (Erin) Jiang, along with Construction Management (CM) students Benjamin Cashen, Kaitlin Knox, Joseph Montello, David Blackwelder, and Ryan Kirk checked out heavy construction equipment at Ring Power CAT in St. Augustine, FL on March 5, 2010. The students were also trained in operating construction equipment via computer simulator.

Study Abroad:

Dr. Malek and James Sorce conducted a study abroad to Egypt in December 2009. Twenty Construction Management students visited the American University in Cairo where they attended construction lectures, visited the Pyramids and Sphinx at Giza, the Valley of the Kings, Luxor Temple and the Aswan High Dam. During this visit, the students studied resource allocation, how the Egyptian culture affects negotiations and the construction process, as well as construction methods and problems specific to the construction industry in the Middle East. Upon their return, students were required to prepare a report using their collected data, photographs, and research on key aspects of the country’s history, culture, bidding and estimating procedures, project delivery methods, project management and other business practices. You can view more photos from the Egypt trip on the CM Web Gallery.

Internship Abroad:

Construction Management students John Brown, Hau Nguyen, Ryan Kirk, Gordon Stasak and Ezekiel Stewart and Electrical Engineering student Noel San Antonio spent several weeks in Bulacan, Philippines building the St. Anthony School for 1st and 2nd graders. The team had a 22-day build schedule that started in July and ended on August 14, 2009. The students did all the
scheduling, estimating, and procurement of supplies as well as directing the work. One of the students commented on the group’s blog, "...we have come here expecting to direct, but we believe that we will be the students. The methods of construction are different, and in many respects the methods are better for the budget, the tools, the needs of the people, and the future builds to come."

2. Describe the extent to which construction students participate in course and faculty evaluation, in curriculum development and revision, and in other student-faculty activities.

CM students formally evaluate each course during the Fall and Spring semesters. This is done by the university via the Instructional Satisfaction Questionnaire (ISQ). The faculty has an option if a course is to be evaluated in summer by the students. The ISQ student evaluation includes both the course and the faculty member as shown in Volume II, Appendix C.

As part of their exit interview, CM graduating seniors are asked to comment and provide opinions on a number of topics including club activities, faculty, facilities and curriculum. Actual survey data on these topics is shown in Volume II, Appendix C.

The Chair has an open door policy. CM students are welcome to visit the Chair to discuss any topic.

3. Describe the extent to which construction students participate in campus wide activities.

CM students may participate in various campus-wide activities. For example, CM students have participated with other University students in a Habijax Day (Homes for Humanity). Currently a number of CM students are planning to participate in the building of a two-room schoolhouse in the Philippines along with other student from the college and the university. CM students participate in other university activities such as student government and fraternities.

4. Comments, if any.

None.
I. Graduates and Placement Data

1. Indicate the number of degrees awarded during the past five years.

Fig. 29: Number of Graduates

<table>
<thead>
<tr>
<th>Year</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08</th>
<th>2008/09</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>45</td>
<td>63</td>
<td>80</td>
<td>108</td>
<td>100</td>
</tr>
<tr>
<td>Masters</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Doctorate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

2. Indicate the first career step of the graduates of the past year. Show the number of graduates in each category.

The CM Department requests employment status on the Graduating Senior Surveys. The following (Fig. 30) shows responses from CM seniors for the past academic year (Summer 09 - 24 responses, Fall 09 - 19 responses, Spring 10 - 39 responses). In past times, every graduate typically had a job upon graduation. This survey reflects the difficult times in finding employment in the US during this economic climate.

Fig. 30: CM Placement Data (Summer 09, Fall 09, Spring 10)

<table>
<thead>
<tr>
<th>Types of Employer</th>
<th>Summer 09</th>
<th>Fall 09</th>
<th>Spring 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction related employment</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Construction or construction</td>
<td>4</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>management firm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material or equipment</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>supplier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner (utility, R.R., etc.)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Design or development</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other (Self Employed)</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Continuing education</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-construction employment</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Seeking employment</td>
<td>18</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>No information</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>19</td>
<td>39</td>
</tr>
</tbody>
</table>

3. The average annual salary for the above graduates is ~$50k-55k.

This salary range comes from verbal feedback from the CM students. There is not a formal survey conducted on annual starting salary.
4. Describe the design of alumni tracking objectives, documents, and procedures.

The CM Department does not formally track graduates. The Department is exploring means to interact with alumni through “Alumni Net”, a WEB based networking application for CM students and graduates provided by the Department. This was made active in fall 2009. Sample graduating student data is shown in Volume II, Section III, Example Assessment Surveys.

The University Foundation maintains a general database of all UNF graduates including CM students. Upon graduation, the UNF Foundation requests each graduate provide their personal contact information. This information is used primarily in University fund raising activities.

5. Provide examples of survey or other documents used, and a summary of the results of the most recent follow-up study.

The Department has tried to conduct a survey of CM alumni in the past. For example, a web based survey on-line alumni survey was attempted but was unsuccessful. The Department provides an “Alumni Net” module on the CM web site: http://projects.ccec.unf.edu/cm/alumni/index.php. This is a forum whereby CM students can network with one another. “Alumni Net” is a listing of CM graduates along with contact information. This is being developed as a means to develop an alumni database that may be used in future alumni surveys and was activated fall 2009.

J. Other

If scholarships or other financial aid is available to students in the program, please indicate.

Financial Aid (http://onestop.unf.edu )

UNF’s Financial Aid Office provides a comprehensive student financial program. This service is open to all UNF students.

-Scholarships: Awards based on grades and/or financial need. These do not require repayment upon graduation.
-Grants: Awards based on financial need. These do not require repayment upon graduation.
-Federal Need-Based & Non-Need Based Loans: Long term, low-interest loans guaranteed by the federal government. These must be repaid after one graduates, withdraws or drops below half-time status.
-Parent/Graduate PLUS Loans: Loans available to Parents or Graduate students, which do not require financial need. If interested in these programs, one needs to complete a PLUS Loan Application.
-Private Education Loans: These loans are not federally guaranteed. Applications must be submitted individually. Terms, rates and restrictions vary. If interested in these programs, one needs to complete the Private Loan Application.
-Part-Time Employment: Federal Work-Study Program based on financial need. Student jobs, hours and salary vary.
## Scholarships

### Department of Construction Management Scholarships

<table>
<thead>
<tr>
<th>Scholarship Name</th>
<th>Number Available</th>
<th>Eligible Majors</th>
<th>Fall Award</th>
<th>Spring Award</th>
<th>Deadline &amp; Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Concrete Institute Florida First Coast Chapter Scholarship</td>
<td>One</td>
<td>BCM CE</td>
<td>0</td>
<td>$1000</td>
<td>31 December 2010</td>
</tr>
<tr>
<td>American Society of Highway Engineers (ASHE) Endowed Scholarship</td>
<td>Two</td>
<td>BCM CE</td>
<td>$500</td>
<td>$500</td>
<td>31 July 2010</td>
</tr>
<tr>
<td>Elkins Constructors, Inc. Endowed Scholarship</td>
<td>Six</td>
<td>BCM CE</td>
<td>$500</td>
<td>$500</td>
<td>31 July 2010</td>
</tr>
<tr>
<td>Miller Electric Company Annual Scholarship</td>
<td>Two</td>
<td>BCM</td>
<td>$1400</td>
<td>$1400</td>
<td>TBA</td>
</tr>
<tr>
<td>Retail Contractors Association Scholarship</td>
<td>One</td>
<td>BCM</td>
<td>$750</td>
<td>$750</td>
<td>TBA</td>
</tr>
<tr>
<td>Sauer, Inc. Scholarship</td>
<td>One</td>
<td>BCM</td>
<td>$500</td>
<td>$500</td>
<td>31 July 2010</td>
</tr>
<tr>
<td>Stellar Endowed Scholarship</td>
<td>Two</td>
<td>BCM Engineering</td>
<td>$1250</td>
<td>$1250</td>
<td>31 July 2010</td>
</tr>
<tr>
<td>The Haskell Company Endowed Scholarship</td>
<td>One</td>
<td>BCM</td>
<td>$1000</td>
<td>$1000</td>
<td>31 July 2010</td>
</tr>
<tr>
<td>Turner Construction Co. Scholarship</td>
<td>Two</td>
<td>BCM</td>
<td>$625</td>
<td>$625</td>
<td>31 July 2010</td>
</tr>
</tbody>
</table>

### Additional Scholarships and Financial Aid

<table>
<thead>
<tr>
<th>Scholarship Name</th>
<th>Number Available</th>
<th>Eligible Majors</th>
<th>Fall Award</th>
<th>Spring Award</th>
<th>Deadline &amp; Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCEC Non-Florida Resident Tuition Waiver Application</td>
<td>NA</td>
<td>Undergrad. or post-bacc. in Computing, Engineering, or BCM. Min. GPA of 2.5. Classified to pay out-of-state tuition.</td>
<td>NA</td>
<td>NA</td>
<td>30 July 2010</td>
</tr>
<tr>
<td>Edward Dancinger Endowed Scholarship [Learn More]</td>
<td>NA</td>
<td>First Time In College, Engineering</td>
<td>NA</td>
<td>NA</td>
<td>TBA</td>
</tr>
<tr>
<td>UNF Transfer Student Scholarships [Learn More]</td>
<td>NA</td>
<td>Florida Transfer Students</td>
<td>NA</td>
<td>NA</td>
<td>TBA</td>
</tr>
</tbody>
</table>
CM Student Scholarships Awarded Fall 2009 & Spring 2010

American Society of Highway Engineers - Joseph D’Acquisto
Elkins Constructors, Inc. - Braughton Webb
Elkins Constructors, Inc. - Daniel Mathia
Elkins Constructors, Inc. - Duy Cao (*fall term*)
Elkins Constructors, Inc. - Kaitlin Knox (*spring term*)
Haskell Company Endowed Scholarship - Hau Nguyen
Haskell Company Endowed Scholarship - Matthew Young
Miller Electric Company Scholars Annual Scholarship - Derek Hedman
Miller Electric Company Scholars Annual Scholarship - Michael Lambraia
Retail Contractors Association Scholars Annual Scholarship - Kyle Boivin
Stellar Endowed - Aaron Cavinder
Stellar Endowed - David Blackwelder

The Department has a hallway photo gallery where the student scholarship winner photos are posted for viewing.
Section VI
VI. FACILITIES AND SERVICES

A. Laboratories

1. List the laboratories used for courses taught by the construction unit. Briefly describe the space, including furnishings and equipment. List the construction courses that use the space on a scheduled basis.

<table>
<thead>
<tr>
<th>Bldg</th>
<th>Room No.</th>
<th>Approx. Area</th>
<th>Laboratory Name</th>
<th>Description</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>1002</td>
<td>926 sq. ft.</td>
<td>W.G. Pitts Bldg. Construction Materials Lab</td>
<td>Mtls. Testing: Concrete crack &amp; rebar; Sieve; Slump; Crush: Steel Tension; Mtls Mix: etc.</td>
<td>BCN 1210C Construction Materials Lab&lt;br&gt;BCN 3223 Soils &amp; Foundations Lab</td>
</tr>
<tr>
<td>50</td>
<td>3124</td>
<td>1449 sq. ft.</td>
<td>FL Rock Const/Annex Computing Laboratory</td>
<td>Computing envir. - ~40 PC Workstations</td>
<td>BCN 3782 Intro to Const. Comp.</td>
</tr>
</tbody>
</table>

2. Discuss whether the space is shared with other academic units and who controls the assignment of the space.

The CM Department is located in the Science & Engineering Building, Bldg. 50. The FL Rock Construction Computing Laboratory is shared between the CM Department and the Engineering programs. This room is used for instruction in both CM and Engineering. When not in use as a classroom, the lab is open to students. An adjacent annex provides another ~25 additional PC Workstations.

The CM W.G. Pitts Building Construction Materials Laboratory is located on the first floor of the Science and Engineering Building. CM and Civil Engineering faculty have an agreement to share laboratory equipment when appropriate depending on course activities. Dr. Roberto Soares, CM faculty member is responsible for the use of the CM Materials Laboratory and Soils Laboratory.

3. Comments, if any.

Student Study Room Building 50 Room # 2006
This room is 1024 SF and is provided for the students to use as a study room, a practice room for presentations, a club meeting room, a meeting space for student competitions, for group projects, and for any guest speakers. It is equipped with electrical outlets for computers, a projection
system with screen, locking storage facilities, white board, bulletin board, 6 worktables and 24 chairs. Internet access is available. Announcements for events and activities are posted in this room to inform students of departmental activities.

B. Classrooms

1. List the classrooms used for courses taught by the construction unit. Indicate the seating capacity, furnishings (i.e., fixed seats, tablet armchairs), and environmental problems (i.e., lighting, cooling, noise, sun control).

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Room No.</th>
<th>Approx. Area</th>
<th>Capacity</th>
<th>Furnishings</th>
<th>Environmental Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science &amp; Engineering Bldg</td>
<td>Typical</td>
<td>~400 sq. ft</td>
<td>~40</td>
<td>Student chairs, instructor station, projector, PC, white board</td>
<td>None in all classrooms.</td>
</tr>
<tr>
<td></td>
<td>1400, 1402, 1404, 1406</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Discuss whether the space is shared with other academic units and who controls the assignment of the space.

Except for the CM courses requiring the Florida Rock Construction Computing Laboratory or the W.G. Pitts Building Construction Materials Laboratory, all classrooms are assigned each semester by the University. Thus, all classrooms are shared by the various University academic units. Classrooms in the Science & Engineering Building are typically used for classes.

3. Comments, if any.

Almost all classrooms generally have an instructor PC, projector and screen. Internet access is also available. In addition to the instructor workstation, many rooms also have a TV monitor, VCR and foil projector. The College has portable PCs as well as projectors. Faculty members and students can check out a portable PC and projector.

The CM program also takes advantage of the college Distance Learning (DL) Classroom. Each semester the CM Department typically places 2-4 courses into this specialized classroom. The DL classroom can accommodate up to 40 students. The lecture is recorded and web cast. A remote student can currently watch the lecture live or can access the lecture later at a convenient time anytime and anyplace. CM has had students located in Iraq and Europe that utilize this mode of CM course delivery.
C. Staff Offices

1. List the staff offices for the construction unit. List sequentially by building and room number.

<table>
<thead>
<tr>
<th>Building</th>
<th>Room Number</th>
<th>Approximate Area</th>
<th>Occupant</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>2010</td>
<td>120 sq ft</td>
<td>Adjuncts, e.g., Ms. Tamara Baker, others</td>
</tr>
<tr>
<td>50</td>
<td>2114</td>
<td>120 sq ft</td>
<td>Dr. Carol Woodson</td>
</tr>
<tr>
<td>50</td>
<td>2120</td>
<td>120 sq ft</td>
<td>Dr. Aiyin Jiang</td>
</tr>
<tr>
<td>50</td>
<td>2122</td>
<td>120 sq ft</td>
<td>Dr. John Dryden</td>
</tr>
<tr>
<td>50</td>
<td>2304</td>
<td>120 sq ft</td>
<td>Mr. James Sorce, CM Advisor/Instructor</td>
</tr>
<tr>
<td>50</td>
<td>2400</td>
<td>120 sq ft</td>
<td>Ms. Pat Nelson, Office Manager</td>
</tr>
<tr>
<td>50</td>
<td>2400</td>
<td>120 sq ft</td>
<td>Ms. Marilou Kelemen, Office Assistant</td>
</tr>
<tr>
<td>50</td>
<td>2402</td>
<td>120 sq ft</td>
<td>Dr. Mag Malek, Chair</td>
</tr>
<tr>
<td>50</td>
<td>3026</td>
<td>120 sq ft</td>
<td>Dr. J. David Lambert</td>
</tr>
<tr>
<td>50</td>
<td>3130</td>
<td>120 sq ft</td>
<td>Dr. Roberto Soares</td>
</tr>
</tbody>
</table>

2. Discuss the location of staff offices on campus, including proximity to secretarial services, classrooms, laboratories, library, and computer.

CM faculty and staff offices are generally on the second or third floor in the new Science & Engineering Building. CM laboratories and computing are in the building. The library is a couple of buildings away. Classrooms may be anywhere on campus.

3. Comments, if any.

The UNF campus is relatively compact. Any academic destination on campus is no more than a 10-minute walk. Student administrative services is located in a new building which is about a 10 minute ride on a UNF provided bus service.

D. Library

1. Indicate how books and periodicals may be obtained by the construction unit (i.e., central library, departmental library, interlibrary loan program, internet, etc.).

Renovation and expansion of the Thomas G. Carpenter Library from May 2004 through December 2005 increased the total space to 199,000 square feet. The seating capacity of the library is 2,000. The library has approximately 300 PC Internet connected workstations available.
to students and 40 laptops available for checkout and use in the Library. The Library also provides wireless connectivity. The construction collection is arranged in Library of Congress call numbering order within the general collection of the library. The library also has approximately 126 audiovisual titles in the areas of construction, architecture and engineering, business and management. CM students and faculty may obtain books and periodicals with the help of the library staff. The library staff can also arrange with the interlibrary loan program to secure publications of interest from other Florida state universities. A library liaison is assigned to the Department who can locate resources for research.

The library provides general reference services, information research, bibliographic instruction and interlibrary loan service to all students and faculty. Such service may be performed within the library, by telephone or through email. Hours (may vary depending on funding) when library facilities are available to students are:

<table>
<thead>
<tr>
<th></th>
<th>Stacks Open</th>
<th>Reference Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday-Thursday</td>
<td>8 am-2 am</td>
<td>9 am-9 pm</td>
</tr>
<tr>
<td>Friday</td>
<td>8 am-6 pm</td>
<td>9 am-5 pm</td>
</tr>
<tr>
<td>Saturday</td>
<td>10 am-6 pm</td>
<td>8 am-6 pm</td>
</tr>
<tr>
<td>Sunday</td>
<td>1 pm-2 am</td>
<td>1 pm-9 pm</td>
</tr>
</tbody>
</table>

The library is not organized into departments by subject. Thus, there are no librarians assigned primarily to construction. The staff serves all users. The staff conducts library tours or in-class lectures at the request of faculty and offers a one-credit course in library research, LIS1001. The library’s online catalog, ALEPH, allows access to the holdings of the other ten state university libraries as well as other national and international universities. Through the library’s home page (http://www.unf.edu/library), students and faculty can reach over 200 databases, both indexes and full text, from within the library or remotely from their offices, dorms and homes. Some examples of databases available are First Search, Applied Science and Technology Index, Engineering Index, INSPEC, Computer and Information Systems Abstracts, ACM Digital Library, and others. Students may print, download or email search results. Through the library’s homepage, students may also ask reference questions, renew books and request interlibrary loans. Finally, the library will purchase any books or periodicals requested by faculty, funds permitting.

Library expenditures for the same last three-year period were:

<table>
<thead>
<tr>
<th></th>
<th>2006/07</th>
<th>2007/08</th>
<th>2008/09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Library Materials Funds</td>
<td>1,492,765</td>
<td>1,551,787</td>
<td>1,652,562</td>
</tr>
</tbody>
</table>

Through publisher journal packages; e.g. Elsevier’s ScienceDirect, SpringerLink, Wiley Interscience, and Oxford Journals Online, the library has electronic access to over 5,000 full text journals, most in science and technology (www.unf.edu/library) which are not subscribed to in print. The Library also provides, through both consortia purchases and local funds, access to over 27,000 full text journals, trade publications, and newspapers in aggregator databases.
Fig. 34: Library Holdings

<table>
<thead>
<tr>
<th></th>
<th>Since last accreditation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Books</td>
<td>Periodicals</td>
</tr>
<tr>
<td>Construction</td>
<td>745</td>
<td>8</td>
</tr>
<tr>
<td>Architecture and Engineering</td>
<td>11,148</td>
<td>85</td>
</tr>
<tr>
<td>Business and Management</td>
<td>62,393</td>
<td>786</td>
</tr>
<tr>
<td>Total Institutional Library</td>
<td>780,000</td>
<td>3,000</td>
</tr>
</tbody>
</table>

Full text periodicals online include construction (53), architecture and engineering (272), and business and management (1,580).

2. Describe where the books and periodicals related to construction are located (i.e., central library, departmental library).

The library first floor houses the media resources department. The second floor has the main reference desk plus 164 computer workstations, two library instruction classrooms, and Documents. Periodicals, part of the General Collection, and the microform collection are found on the third floor. The fourth floor has the main part of the General Collection, graduate carrels, and a classroom laboratory. Overall there are 816,643 volumes, 52,468 electronic books, 27,000 audio/visual units, 2,350 print periodicals subscriptions, 1.48 million microform units, 21 Library Faculty and 24 Library Support Staff.

3. Describe how the budget for the purchase of library materials for the construction unit is established and how new acquisitions are selected.

The Department does not have a direct budget for the library. The College receives some funds on an annual basis from the Provost. The College coordinator does a solicitation of the College faculty on any new materials desired for the library. The CM faculty members may participate in this process by specifying the materials to be purchased. Faculty can also request the library to add new materials. Funds permitting, the library has always been most accommodating.

4. Identify the courses taught by the construction unit that make extensive use of library reference materials, and discuss the utilization.

Virtually all junior and senior CM courses require a project paper and a presentation. The students use primarily the library and Internet reference sites to prepare their project and presentation assignments.
E. Audiovisual Services

1. Describe the audiovisual services of the institution.

Audio Visual and Classroom Tech Support Guidelines

In an effort to better meet the A/V needs of faculty and staff, the ITS Support Center offers the following guidelines:

1. To ensure availability and timely delivery, faculty and staff should make requests for deliveries of audiovisual equipment, including laptops, video projectors, at least 24 hours in advance.

2. Faculty and staff with recurring requests should notify the ITS Support Center (helpdesk@unf.edu, 620-HELP (4357)) when they do not need the equipment or service for a given day or time period, making the resource available to other faculty and staff.

3. The ITS Help Desk will give priority for audiovisual equipment to requests tied directly to a course. The Help Desk will accommodate other requests on a case by case basis and as resources are available. The Help Desk will notify the requestor within 24 hours if the resources are not available for an event not directly tied to a course.

4. Staff may check out a laptop and/or portable video projector from the Support Center for up to a period of up to two weeks. The appropriate C-Tech will be provided with an Equipment Loan Request Form and will be responsible for setting up the laptop to accommodate the requestor’s needs. Note: CIRT provides a laptop and projector check-out service for faculty.

http://www.unf.edu/dept/cirt/services/equipment.htm

The University provides audiovisual services to the faculty through the Information Technology Services (ITS) team. The CM faculty members on occasion utilize ITS services. For the most part, the classroom faculty PC Workstation along with the projection system is all that is required. CM faculty may also check out a portable PC along with a projector from the Dean’s office.

2. Describe the audiovisual resources and the visual aids of the construction unit.

The need for Departmental audiovisual resources has diminished over time due to the capability now provided by the University in essentially every classroom. Additional audiovisual gear, if required, may be checked out of the Dean’s office or Information Technology Services.

3. Describe the usage of visual aids in the courses taught by the construction unit.

CM faculty and students typically use the PC Workstation and projection system in the classroom for presentations. Portable computers and projectors are also available from the Dean’s office and Information Technical Services.

F. Computer Facilities

1. Describe the computer facilities of the institution and the procedure for obtaining time on the computer.

The following is a summary of the university resources that are available to all students:
Dell GNU/Linux Servers
The University has four Dell PowerEdge servers running the Redhat Enterprise LinuX 4 Operating System. These servers are connected to the high-speed gigabit Ethernet campus backbone and provide e-mail, file storage, shell access and instructional services to students as well as web services for the entire campus.

GENERAL PURPOSE ACADEMIC SERVER (osprey.unf.edu)

- **Server Model:** PowerEdge 6850
- **Development Tools:** GNU C, C++, Java, Perl, Python, Lisp
- **Installed Memory:** 8 GB
- **Configured CPU’s:** 4 (8 logical) Intel Xeon MP, 3.
- **Hard Disk Storage:** 73 GB, 15K RPM, Ultra320 SCSI (RAID 1)
- **RAID Controller:** Ultra320 SCSI, 2-Channel

WEB SERVER (www.unf.edu)

- **Server Model:** PowerEdge 2850
- **Web Server:** Apache 2.0
- **Installed Memory:** 4GB
- **Configured CPU’s:** 2 (8 logical) Intel Xeon 2.8 GHz
- **Hard Disk Storage:** 73 GB, 15K RPM, Ultra320 SCSI (RAID 1)
- **RAID Controller:** Ultra320 SCSI, 2-Channel

NFS SERVER (backend file server for other servers)

- **Server Model:** PowerEdge 2850
- **File services:** NFS v.4
- **Installed Memory:** 4GB
- **Configured CPU’s:** 2 (4 logical) Intel Xeon 3.6 GHz
- **Hard Disk Storage:** 73 GB, 15K RPM, Ultra320 SCSI (RAID 1)
- **External Disk Array:** 14 X 73 GB, 15K RPM, Ultra320 SCSI (RAID 5)
- **RAID Controller:** (2) Ultra320 SCSI, 2-Channel

Network Accounts
Network accounts are provided to every student. The account allows a student to access myWings portal, Blackboard, E-mail, and create a personal web page. There is no charge back for the use of the university computing resources.

General Purpose Lab
The General Purpose Computer Lab houses 95 Dell OptiPleX 755 2.5Ghz Quad Core, 26 Apple iMac 1.83Ghz, six Epson Scanners, and both color and black & white “Pay for print” laser printers. The General Purpose Lab is open 106.5 hours/week.
Software

Internet - Modern web browsers (i.e. IE7, Firefox), SSH & SFTP connectivity software, assorted media plugins

Productivity: Adobe Creative Suite 3, Apple iLife ’06, Microsoft Office 200


Disciplinary - ArcGIS, Inspiration, Gliem CIA/CMA/CPA Test Prep, Maple, MathCAD, MiniTab, Python, SAS, SPSS

Access to the labs is managed by in-place account authorization systems utilizing Active Directory. Student lab assistants are available to help students using the lab facilities.

Computer Technology Classrooms

Information Technology Services manages two computerized classrooms housing Windows computers. These classrooms, located in the Mathews Building, provide each student with a high-end computer, printing services, and computer projection.

PCLAB I  40 Dell GX620  3.4Ghz
PCLAB II  25 Dell GX620  3.4Ghz

Help Desk

The ITS Help Desk (15/2106) is located adjacent to the Mathews General Purpose Computer Lab. The Help Desk provides assistance with myWings, student E-mail, Blackboard, OspreyNet (residence hall network), etc.

Residence Hall Network

OspreyNet, made available by UNF’s Information Technology Services in cooperation with University Housing, is a high-speed computer network for resident students. For more information about OspreyNet, visit http://www.unf.edu/anf/its/ospreynet/. All students using OspreyNet services are encouraged to view the Acceptable Use Policy at http://www.unf.edu/anf/its/ospreynet/Acceptable_Use_Policy.aspx.

Wireless

Information Technology Services has installed wireless access points in many locations on the campus. Wireless connectivity offers students, faculty, and staff the freedom to access IT resources and the Internet without the use of cables. For more information about wireless and to view a coverage map, visit http://www.unf.edu/anf/its/wireless/.
Web Portal at UNF: myWings
myWings (http://mywings.unf.edu) is the University of North Florida’s web “portal,” providing students with a single, secure point of entry to UNF web-based resources and timely information tailored specifically for and by the user. The myWings web portal makes it easy to find and organize information to meet the specific needs of students. The Quick Links channel provides fast access to Blackboard, E-Mail, SkillSoft Online Learning, and Student Update.

Blackboard
Blackboard is a web-based E-learning software platform used for distance learning and to augment many of the courses taught at UNF. It includes such features as course documents, a personal calendar, and discussion board.

Communications
UNF is connected to the Commodity Internet through Florida Lambda Rail (FLR), a statewide network which optically connects the state universities. UNF is an equity owner in FLR. FLR connects to the Internet2 and National Lambda Rail (NLR) network. UNF is in the final stages of deploying a multi-gigabit Ethernet backbone network, which provides gigabit Ethernet connections client desktops.

Training
Students have access to free web-based training (SkillSoft e Learning) in such areas as Microsoft Word, Excel, Power Point, HTML and web browsers. Information Technology Services conducts workshops at the beginning of each term on using UNF E-mail, Blackboard, myWings, and student storage space.

Student File Storage (H: Drive)
Students can download a utility called WebDrive that will allow them to access their file storage space from any computer with Internet access. Once the connection is established, the drive will appear on their computer just like a local C drive. Students can also access their storage space on the computers in the Library and the General Purpose Computer Lab. After logging into one of these computers, their storage space will show up automatically as the H: Drive.

Personal Web Pages
Students can create their own personal sites on a UNF-sponsored server connected to the World Wide Web. Information Technology Services also provides space for student organizational pages as well as hosting official departmental sites on www.unf.edu.

Student Update
Announcements, alerts, and notices about academics, arts & entertainment, clubs & organizations, and lectures & seminars are posted on http://www.unf.edu/studentupdate. Students are encouraged to read Student Update regularly to stay informed of campus happenings.
2. Describe the computer facilities of the construction unit.

Each faculty member has a PC Workstation. Through “currency”, the University replaces the faculty PCs every three years. All faculty PCs are connected to the Internet. Each classroom generally has a faculty PC Workstation and projection system in the room. Students are encouraged to have their own desktop or portable computer. However, it is not mandatory. The University has multiple PC laboratories around the campus available for students. In addition, the Florida Rock Construction Computing Laboratory is open during the day for CM and Engineering students when not being used for a course. The annex to the Florida Rock Construction Computing Laboratory has an additional ~25 PC Workstations available for CM students.

3. Describe the usage of the computers by the construction unit and the students.

PCs are used extensively by the CM faculty and students. Almost every course has projects and presentations required. A number of courses utilize PCs extensively such as BCN 3782 Introduction to Construction Computing and BCN 3611C Construction Cost Estimating. CM students participating in student design competitions utilize portable PCs and projectors. Overall, Computer and Internet Literacy is one of the Department’s Expected Educational Outcomes for a graduating CM student.

G. Placement Services

1. Describe the institutional placement services.

Contact Us: University of North Florida  
Career Services  
Founders Hall, Bldg 2, Room 1100  
1 UNF Drive, Jacksonville, FL 32224-7699  
Telephone (Voice and TDD): (904) 620-2955, Fax (904) 620-2690  
EMail General Questions: a.lelis@unf.edu

Hours of Operation: Monday -Friday 8:00 a.m. - 5:00 p.m.

UNF’s Career Services provides general support and counseling to students seeking permanent employment or a Co-op or Internship. Career Services provides students with help in preparation of resumes and cover letters. Other services include practice in interviewing, guidance in job search strategies and on-campus job fairs. Offices for employers to conduct interviews are also provided.

Career Services has also placed a resident Career Coordinator, Ms. Rebecca Johnson, in the Science & Engineering Building near the CM Department. In addition, Career Services provides an online application, Career Wings, where students can post their resumes for prospective employers. In addition, employers can job postings, which are automatically sent to students seeking employment. [www.unf.edu/dept/cdc](http://www.unf.edu/dept/cdc)
2. List the companies that utilized the institutional placement service during the past year that requested interviews with graduates of the construction program.

During 2009/10 and 2008/09, the following companies utilized UNF Career Services to recruit and interview graduating and recently graduated students from the construction program:

- Spring 10 – On Campus Interview
  None
- Fall 09 – On Campus Interview
  Baker Construction
  Barnard Construction
  Kiewit
  RJ Griffin
- Summer 09 – On Campus Interview
  None
- Spring 09 – On Campus Interview
  Kiewit
- Fall 08 – On Campus Interview
  Barnard Construction
  Brasfield & Gorrie
  Holder Construction
  Kiewit
  RJ Griffin
  Titan America
- Fall 08 – Information Session
  Brasfield & Gorrie

These firms are for the last two academic years, and do not include construction employers who participate in the CM Internship program and the two college Employment Showcases listed in the following. Overall, Career Services has a database of 199 construction firms who have used their services in recruiting CM students.
CCEC Employers Spring & Fall Employment Showcases

The College held the Spring 2010 Employer Showcase on March 9 in the UNF Student Union ballroom. Thirty construction, engineering and computing employers attended the Showcase. Two hundred, eighty (280) CCEC students and alumni attended the event. Construction firms are shown in bold type.

Ajax Building Corporation
Archer Western Contractors, Ltd.
Baker Concrete Construction
Batson-Cook Company
BE&K Building Group
Florida Department of Transportation
Golder Associates Inc.
HabiJax
Haskell
HDR Engineering, Inc.

Hensel Phelps Construction Co.
Kiewit Southern Co.
Lender Processing Services (LPS)
Lennar
Manson Construction Co.
New Age Solution, LLC
PPI Construction Management
Raydon Corporation
Reynolds, Inc.

RJ Griffin and Company
RS&H
Sauer Incorporated
SKANSKA
Smurfit-Stone Container Corp
Stellar
Superior Construction Company
Turner Construction Company
Unison Industries
US Navy

The College held the Fall 2009 Employer Showcase on October 15. Over thirty firms attended and of the over 250 CCEC students who attended, 116 of those were Construction Management students. Construction firms are shown in bold type.

Ajax Building Corp.
Allstate Construction
Archer Western Contractors
B.E.& K. Building Group
Barton Malow Company
Batson-Cook Co.
Brasfield & Gorrie
Corys Thunder
Danis Construction
Elkins Constructors

H2Engineering
Hubbard Construction
Kiewit Southern Co.
Lender Processing Services
Liberty Mutual Group, Inc.
Manson Construction
NAVAIR/U.S. Navy
PPI Construction Mgt
R. J. Griffin & Co.
Raydon Corporation

RS&H
Sauer Inc.
SKANSKA
Strategic Weapons Facility
Superior Construction
Taylor Engineering
The Stellar Group
Whiting-Turner Contracting
Xorail

CM Student Internship Program

The Internship Program is a requirement of the CM academic program. Students gain practical on-the-job experience. In addition, the Internship provides a means to establish a close working relationship with the construction industry and UNF. In many cases, the Internship leads to permanent employment. The student interns in 2009/2010 were:

Spring 2010

Bass, Murray – Stellar
Edgar, Ryan - Coppedge Enterprises
Gard, Clay - Register Construction

Crawford, Phillip – JEA
Facini, Brandon - Jaguar Builders of Jax., Inc.
Greene, Joseph - Concrete Advantage

Section VI
Ingram, Blake - St. Johns Housing Partnership
Knox, Kaitlin - Manson Construction
Moore, Ryan - TCI Construction
Pawley, Clayton - TCI Construction
Stone, Michael - Consolidated Contracting

Jackson, Kevin - Spatial Concepts, Inc.
Lambraila, Michael - Stellar
Moore, Zachary - F & G Construction
Shouppe, Cameron – Shouppe Enterprises

**Fall 2009**

Beeman, Joseph - Manson Construction
Cashen, Benjamin - David Weekly Homes
Cox, Joshua J. - Sauer, Inc.
Iglio, Lauren – Haskell
Kirk, Ryan - Manson Construction Co.
Nappy, Justin - Century Builders
Savoy, Marc - Elkins Constructors, Inc.
Stallings, Ryan – Sauer, Inc.
Warner, Matthew – Stellar

Cao, Duy - Allstate Construction, Inc.
Cayll, Philip M. - Ivey Mechanical
Goodman, Neal - SNS General Contractors
Jackson, Kevin - Spatial Concepts, Inc.
Ladson, Jessie - Superior Construction
Riccaboni, Mark - Habitat for Humanity
Shouppe, Cameron - Williams & Rowe Co., Inc.
Tolbert, Greg - Coppedge Enterprises, Inc.

**Summer 2009**

Aikens, Matthew S. - Red Sea Housing
Barto, Gregory - Walt Disney World Co.
Burrough, Andrew - Manson Construction
D’Acquisto, Joseph - Smart Watt Energy
Hoelzer, Jeffrey - Archer Western
McDermott, Josh - Archer Western
Moore, Zach J. - F & G Construction
Mulvaney, Brian - Superior Construction
Reynoso, Jennifer - E. Kelly Enterprises, Inc.
Snyder, Joshua - Bovis Lend Lease
Tucci, Jeff - Hensel Phelps Construction

Auld, David, W. - Auld & White
Boivin, Kyle - C. Vaughn Rivers, Inc.
Cooper, Brittany - GC&C Home
Ryan, Edgar - Coppedge Enterprises
Jacobs, Karla - Brankol eEnterprises
Modine, Jared - Paul Jacquin & Sons, Inc.
Morgan, Brett - J & L Company, Inc.
Nestle, Jacob - Clancy Theys Construction.
Smith, Thomas - Hardin Construction Co.
Strong, Adam - Turner Construction
Young, Matthew - James Shelton Roofing

3. Comments, if any.

The Department assists employers who are seeking applicants. Employers are invited to email their job advertisements to the Department. The Department does an emailing of the job advertisement to all Upper Division CM students. Any CM student interested in the position is invited to deal with the hiring company directly.

Per the request of CM graduating seniors, the Department initiated “Alumni Net”, a web networking site for CM students located on the Department web site. Students who are graduating and are interested can place their names and contact information on this site. CM graduates can network among themselves after graduation. The Department does this as a service for CM graduates.
Section VII
VII. RELATIONS WITH INDUSTRY

A. Advisory Committee

1. List the members of the industry advisory committee, their corporate affiliations, and the type of construction activity they represent.

The Dean has an industry advisory committee, the Dean’s Leadership Council, composed of 34 members from the community who are acquainted with the community needs in computing, engineering, and construction. Sixteen of the members of the Dean’s Leadership Council are from the construction industry. They are:

- Barry Allred, Elkins Constructors
- Ron Autrey, Miller Electric
- K. Dawn Blackledge, Aerostar Envir Services
- John Cobb, Consultant
- George Tobi, W.W. Gay
- John Patton, Haskell
- Robert Fleckenstien, Summit Contractors
- Ronald Foster, Sr., The Stellar Group
- N. Hugh Mathews, England-Thims & Miller
- Paul Sandifer, Miller Electric Company
- Allison Korman, The Stellar Group
- Lisa Wolff, Wolf Constr. Svs.
- Richard Lovelace, The Stellar Group
- Edward White, Jr., Auld & White
- W. Ronald Woods, Woods Engineering
- Scott Parker, Elkins Construction

The Department also has the Construction Management Advisory Committee composed of 13 representatives from the construction industry. Fifteen of these industry representatives are employed by construction general contractors. One is with a construction association. Current members of the CM Management Advisory Committee are:

- Arrington, Pat, Vice President, R. J. Griffin & Company
- Auld, Steve, Sr. Vice President, Auld & White Constructors
- Baldwin, Scott, Divisional VP, Stellar
- Church, Travis, Project Engineer, Atlantic Coast Asphalt Company
- Cook, Paul, Project Engineer, Sauer
- Gray, Denver, Project Manager, Kiewit
- Hacker, David, Owner, Construction Specialties of N FL
- Layton, Glenn, Division Vice President, Woodside Homes of North Florida
- Mantia, David, Assistant Project Manager, Auld & White Constructors
- Schaefer, William, Director of Operations, Barton Malow
- Schmitt, Ryan, President, Petticoat-Schmitt Civil Contractors,
- Tappouni, Mary, President, Breaking Ground Contracting
- Zechman, Gregory, Vice President, Sauer Incorporated

Section VII
2. Describe advisory committee procedures.

The Construction Management Advisory Committee meets once per semester to participate with the CM faculty and Chair on in depth reviews of various aspects of the CM program. On occasion, a separate meeting may follow between individual members of the council and the Dean and/or Chair on matters such as enrollment and the associated number of faculty lines to support the teaching workload.

The CM Chair calls for the meeting of the Construction Management Advisory Committee. The Chair provides a proposed agenda on items of interest such as the forthcoming ACCE accreditation review. Any topic can be brought to the committee meeting such as the Department strategic plan, the student activities related to Community Based Service Learning, Transformational Learning Opportunities (TLOs), student competitions, status on the self assessment and continuous improvement program, the departmental vision, the annual report, and the accreditation self study report, etc.

In between the committee meetings, there are other interactions such as email discussions and meetings with the Dean and/or Chair on specific topics.

At the end of the Spring Semester, the Dean holds a meeting of all advisory bodies to the various academic units. Topics of discussion include the Florida Education budget for the next fiscal year, pending actions by the Florida Legislature and the Florida Board of Governors (higher education governing body), and the status of the College.

3. Describe the ways in which the advisory committee has assisted the construction unit.

The construction industry participants, including members of the Dean’s Leadership Council and the Construction Management Advisory Council, have been very supportive of the CM Department. Assistance to the CM Department by the construction industry includes:

- Provide guidance and counsel to the Department and Dean on a continuing basis.
- Participate as a member(s) on Faculty Search Committees.
- Help identify candidates for adjunct positions.
- Contribute funds to support a course or a track concentration.
- Contribute funds to support various CM student activities.
- Contribute to CM scholarships.
- Contributed matching funds for the Science & Engineering building.
B. Contributions

1. Indicate the total contributions made to the construction unit during the past year and the five-year total. Show the number of donors in each group.

<table>
<thead>
<tr>
<th></th>
<th>Previous Year 2009/10</th>
<th>Five Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Amount</td>
</tr>
<tr>
<td>Const. Associations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Contractors¹</td>
<td>22</td>
<td>$21,300</td>
</tr>
<tr>
<td>Alumni</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Faculty</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Individuals</td>
<td>1</td>
<td>$250</td>
</tr>
<tr>
<td>Other (+ Bldg Fund)²</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>24</td>
<td>$23,050</td>
</tr>
</tbody>
</table>

¹ This includes 16 internships at $400 each, and 6 contractor donations.
² Includes scholarships.

2. List non-monetary contributions to the construction unit during the last five years.

The non-monetary contributions to the CM Department by the construction industry have been basically the use of offsite facilities, hosting class visits to job sites, providing a speaker, and a number of book contributions. The construction industry primarily contributes money in support of the Department student needs.

- Provide Internship opportunities for CM students.
- Provide guest speakers for class lectures.
- Provide part time employment for CM students.
- Provide support on community service projects.
- Support site visits for classes and student club activities.
- Participate in student club activities, e.g. speakers and pizza.
- Provide specifications, contracts and blue prints as teaching materials.
- Attend the twice yearly employers’ showcase.

C. Seminars and Short Courses

1. Indicate the seminars and short courses conducted by the construction faculty for the construction industry during the past year. Indicate the names of the construction faculty that participated as chairs, group leaders, lecturers, etc.

There were no seminars or short courses conducted by the construction faculty for the construction industry this past year.

2. Comments, if any.

None.
D. Research

1. Indicate research, sponsored and non-sponsored, conducted by the construction unit during the past five years. Indicate the sponsors, the amount of the funding, and the major investigator(s).

**Fig. 37: Research**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Description</th>
<th>Sponsor</th>
<th>Amount ($)</th>
<th>Major Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/2010</td>
<td>Motorcycle Traffic Crash Mapping and Analysis</td>
<td>Institute of Police Technology and Management/Florida Department of Transportation</td>
<td>$30,046</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2009/2010</td>
<td>Financial Risk Management of NRCA contractors</td>
<td>NACA</td>
<td>$7,000</td>
<td>Dr. J. Dryden</td>
</tr>
<tr>
<td>2008/2009</td>
<td>Flexible Pavement Test Tracks for Pavement Testing</td>
<td>FL Dept of Transportation</td>
<td>$361,937</td>
<td>Dr. M. Jackson</td>
</tr>
<tr>
<td>2007/2008</td>
<td>Hurricane Application Research</td>
<td>FL International University/NOAA</td>
<td>$44,544</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Hurricane Research &amp; Wetlands Conservation</td>
<td>Multiple, e.g., EPA, NOAA, etc</td>
<td>$205,922</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Pavement Texture Harmonization &amp; Skid Resistance</td>
<td>FL Dept of Transportation</td>
<td>$150,000</td>
<td>Dr. M. Jackson</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Development of a Florida Mesoscale Weather Station Network – Phase III</td>
<td>Florida International University/NOAA</td>
<td>$92,562</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Florida Highway Patrol Regional Map Series and GIS Database</td>
<td>Florida Department of Highway Safety and Motor Vehicles</td>
<td>$4,000</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Phase II: Development of a Florida Mesoscale Weather Station Network – Supplemental</td>
<td>Florida International University/NOAA</td>
<td>$10,000</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Using the Weather Research and Forecast Model (WRF) to Investigate Mesoscale Land-Sea Breeze System and Convective Influences in Northeast Florida</td>
<td>Environmental Protection Agency</td>
<td>$79,360</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2006/2007</td>
<td>Wetlands and Conservation Easement Mapping Pilot Study</td>
<td>Preservation North Florida</td>
<td>$20,000</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>2004/2005</td>
<td>Hazmat Incident Response</td>
<td>Florida Department of Health</td>
<td>$47,250</td>
<td>Dr. J. D. Lambert</td>
</tr>
<tr>
<td>Dates</td>
<td>Description</td>
<td>Sponsor</td>
<td>Amount ($)</td>
<td>Major Investigator</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>2004/2005</td>
<td>Balcony Concrete Repair Phase II</td>
<td>Stonewood Towers Condominium Association</td>
<td>$5,000</td>
<td>Dr. M. Malek</td>
</tr>
<tr>
<td>2004/2005</td>
<td>Balcony Concrete Repair Phase III</td>
<td>Stonewood Towers Condominium Association</td>
<td>$25,000</td>
<td>Dr. M. Malek</td>
</tr>
</tbody>
</table>

2. Comments, if any.

None.

E. Work Experience Programs

1. Describe the co-operative work experience program. Indicate the number of students and companies involved during the past year.

The CM Department does not have a formal co-operative program. As part of the Program of Study, the CM Department does require each CM student to take an Internship, a three-month rotation with a construction company. A second Internship may be taken as an elective as part of the Program of Study. Many students work part time in the construction field while attending school. The CM students and companies involved in the Internship program in 2009/10 were:

**Spring 2010**

<table>
<thead>
<tr>
<th>Student</th>
<th>Company/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murray Bass</td>
<td>Stellar</td>
</tr>
<tr>
<td>Phillip Crawford</td>
<td>JEA</td>
</tr>
<tr>
<td>Ryan Edgar</td>
<td>Coppedge</td>
</tr>
<tr>
<td>Brandon Facini</td>
<td>Jaguars Builders</td>
</tr>
<tr>
<td>Clay Gard</td>
<td>Register Construction</td>
</tr>
<tr>
<td>Joseph Green</td>
<td>Concrete Advantage</td>
</tr>
<tr>
<td>Blake Ingram</td>
<td>St. Johns Housing Partnership</td>
</tr>
<tr>
<td>Kevin Jackson</td>
<td>Spatial Concepts, Inc</td>
</tr>
<tr>
<td></td>
<td>Kaitlin Knox</td>
</tr>
<tr>
<td></td>
<td>Michael Lambraia, Jr.</td>
</tr>
<tr>
<td></td>
<td>Ryan Moore</td>
</tr>
<tr>
<td></td>
<td>Zachary Moore</td>
</tr>
<tr>
<td></td>
<td>Clayton Pawley</td>
</tr>
<tr>
<td></td>
<td>Cameron Shouppe</td>
</tr>
<tr>
<td></td>
<td>Michael Stone</td>
</tr>
<tr>
<td></td>
<td>Gregory Tolbert</td>
</tr>
<tr>
<td></td>
<td>Manson Construction Co</td>
</tr>
<tr>
<td></td>
<td>Stellar</td>
</tr>
<tr>
<td></td>
<td>TCI Construction, Inc</td>
</tr>
<tr>
<td></td>
<td>F&amp;G Construction</td>
</tr>
<tr>
<td></td>
<td>TCI Construction, Inc</td>
</tr>
<tr>
<td></td>
<td>Steven Shouppe</td>
</tr>
<tr>
<td></td>
<td>Enterprises</td>
</tr>
<tr>
<td></td>
<td>Consolidated Contracting</td>
</tr>
<tr>
<td></td>
<td>Consolidated Contracting</td>
</tr>
<tr>
<td></td>
<td>Coppedge Enterprises</td>
</tr>
</tbody>
</table>
2. Describe the summer job program. Indicate the number of students and companies involved during the past year.

The CM Department does not offer a summer job program. As noted previously, CM students are required to take an Internship as part of their Program of Study. They may take their Internship in fall, spring or summer semester. Per the request of the construction industry, the Program of Study was modified to allow a student to take a second Internship as an elective. It should be noted that many CM students work part time in the construction industry throughout the year.

F. Placement Assistance

1. Describe activities of the construction unit to assist individual employers with the job placement process. (Exclude the institutional placement service, which is discussed in Section VI.)

Activities by the CM Department to assist construction employers in the job placement process:
1. Employment Showcase (job fairs)
2. Emailings to CM students of job openings that are sent to the CM Department.
3. Job fair coordination with the University of Florida.

Employment Showcase

The college holds the College of Computing, Engineering and Construction Employer Showcase two times a year. The most recent was held on March 9, 2010 in the UNF Student
Union ballroom. Thirty construction, engineering and computing employers attended the Showcase, 280 CCEC students and alumni attended the event. Attending construction firms are shown in bold type:

- Ajax Building Corporation
- Archer Western Contractors, Ltd.
- Baker Concrete Construction
- Batson-Cook Company
- BE&K Building Group
- Florida Department of Transportation
- Golder Associates Inc.
- Habijax
- Haskell
- HDR Engineering, Inc.
- Hensel Phelps Construction Co.
- Kiewit Southern Co.
- Lender Processing Services (LPS)
- Lennar
- Manson Construction Co.
- NAVAIR
- New Age Solution, LLC
- PPI Construction Management
- Raydon Corporation
- Reynolds, Inc.
- RJ Griffin and Company
- RS&H
- Sauer Incorporated
- SKANSKA
- Smurfit-Stone Container Corp
- Stellar
- Superior Construction Company
- Turner Construction Company
- Unison Industries
- US Navy

**Job Openings** - The CM Department also invites companies to email their open job position descriptions to the Department. These employment opportunities are emailed to all CM students in upper division. Students interested in the job are instructed to follow up with the company directly.

2. Describe coordinated efforts with construction industry associations to place graduates with employers.

The Department does not have a formal program with construction industry associations to place graduates. Through the student club interactions and the ASC student design competitions, the CM students do have opportunities to expand their network in the construction industry.

G. Student-Industry Interaction

1. List the national construction associations that sponsor student organizations affiliated with the construction unit. Describe the interaction with the sponsoring association.

The CM Department has a number of student clubs associated with national construction organizations over the accreditation period including:

- Associated General Contractors
- Construction Management Association
- Construction Specifications Institute
- National Association of Home Builders
- Sigma Lambda Chi Honor Society
NAHB Student Competitions
Mr. James Sorce led a team of nine CM students who participated in the National Residential Competition at the International Builder’s Show in Las Vegas in January 2010.

Sigma Lambda Chi

The Spring 2010 Sigma Lambda Chi inductees are: Derek Hedman-President, Christine Short-Vice President, Kyle Boivin-Treasurer, Kyle Allen, Joseph D'Acquisto, Brandon Facini, Lauren Iglio, Ryan Kirk, Kaitlin Knox, Paul Ly, Jeffrey McFarland, Van Morgan, Brian Mulvaney, Joseph Shepard, Ryan Stallings. The following article from the Spring 2009 Construction Management Department newsletter (which is disseminated to industry) reflects Sigma Lambda Chi membership goals and activities:

“Sigma Lambda Chi, an international honors society for Construction Management majors, recognizes the top fifteen percent of students in the program, based on academic achievement. UNF has inducted over 150 students into Sigma Lambda Chi since 2002. Construction Management student Jennifer Reynoso is the current President of UNF’s NuIV Chapter. During her presidency, Reynoso has encouraged students to challenge themselves academically, cultivate a greater awareness of industry standards, and take advantage of opportunities to expand their education beyond the classroom. Reynoso is planning several volunteer projects at the Alden Road Exceptional Student Center for students to participate in during the spring and fall semesters. This will not only provide students with additional hands-on experience, it will also give them the opportunity to give back to the community. Her vision for the future of the NuIV Chapter includes creating permanent relationships with the Alden Road Exceptional Student Center, the Rotary Club of North Jacksonville, Builder’s Care, and many more community based organizations. Her personal goals for the future include graduating with honors (Fall 09), remaining dedicated to Sigma Lambda Chi by participating in ceremonies and event planning, and securing a position with a company that will encourage her to grow as an individual. She plans on a long career in the construction industry and eventually owning her own company.”

Community Service Projects

Container Project, Spring 2010 – Construction Management students in Dr. Mag Malek’s Industrial Construction II TLO class are applying their knowledge and skills to the task of refurbishing, modifying, and transforming surplus shipping containers to serve a myriad of purposes such as pavilions, affordable housing, shelters, classrooms and libraries. This community-based learning project, supported partially with funds from UNF’s Transformational Learning Opportunity (TLO) program, affords students an opportunity to learn from and work with professionals in the industry who have experience with this form of construction. In managing and executing this
project, and building a final product that will be used to meet a community need, the students will develop and strengthen their community engagement skills.

**Beaches Habitat for Humanity, Spring 2010** – The CM Capstone class is working with Beaches Habitat for Humanity to find a cost-effective solution to Green Housing certification.

**Jacksonville National Cemetery, Fall 2009, Spring 2010** - Construction Management students will work with the North Jacksonville Rotary Club on an educational center at the Department of Veterans Affairs-owned Jacksonville National Cemetery. This community service project will serve as the CM Capstone project in which students will develop their budgeting and scheduling experience as they work with industry leaders. The Fall 2009 Capstone class developed and presented conceptual designs and budgets for the 10,000 square foot building.

**Philippines, Summer 2009** - Four University of North Florida Construction Management students traveled to the Philippines in July 2009 to work on the second phase of the St. Anthony’s Learning and Development Center construction project in conjunction with the project’s founder, UNF School of Engineering alumnus, Noel San Antonio. The three week long Transformational Learning Opportunity served as a for-credit internship for the four Construction Management students, Johnathan Brown, Ryan Kirk, Hau Nguyen, and Gordon Stasack (a recent graduate as of Summer 09).

**Alden Road Exceptional Student Center, Spring 2009** – The CM Capstone class worked with the North Jacksonville Rotary Club to present designs for a proposed Airnasium at the Alden Road School in Jacksonville. The Fall 2008 Capstone class built a gazebo at the Alden Road Exceptional Student Center.

**Youth Crisis Center, Fall 2008** - Twenty-one UNF CM students volunteered their labor to help framing and sheeting of the new Youth Crisis Center (YCC) building, October 2008. This project continued throughout the next two terms. The YCC helps troubled youths, providing short–term and long-term housing and counseling programs. The students are supported by Builders Care and North East Florida Builders Association (NEFBA) on the project.
2. List the major field trips taken during the past year. Include the job location, the number of participants, and the associated course.

Site visits/Field Trips

**Spring 2010** - Dr. Aiyin (Erin) Jiang, along with Construction Management (CM) **BCN 4872C Heavy Civil II** students Benjamin Cashen, Kaitlin Knox, Joseph Montello, David Blackwelder, and Ryan Kirk checked out heavy construction equipment at Ring Power CAT in St. Augustine, March 5, 2010. The students were also trained in operating construction equipment via computer simulator.

**Spring 2009 - BCN 4709** Construction Capstone. Dr John Dryden took forty students to Alden Road Exceptional School on three separate occasions for site visits and presentations.

**Spring 2009 - BCN 4730** Construction Safety, Dr. David Lambert, Each two-student group (20 groups) was required to interview two safety managers at two different construction companies on a construction site as a component of their group research project.

**Spring 2009 - BCN 4872C Heavy Civil I**. Dr. Aiyin Jiang took ten students to observe construction equipment and operation on a Cocoa Beach I-95 widening construction project.

**Spring 2009 – BCN 4931** Seminar: Construction Management. Mr. James Sorce took twenty-seven students to observe the construction of UNF’s new Student Union.

**Spring 2009 and Fall 2008  BCN 4990 Construction Forensics II and BCN 3991 Construction Forensics I**, Dr. David Lambert, each semester, the students participated in a weekend-long field exercise to practice field data collection methods and get hands-on experience with mobile computing and mapping applications and equipment. Also, each semester, the students participated in a day-long field trip to the offices of the National Weather Service in Jacksonville and the Duval County Emergency Operations Center in downtown Jacksonville.

**Fall 2008 - BCN 3012** History of Construction, Dr. David Lambert, Each two – student group was required to visit the building or structure that they were researching for their course project/report.

**Fall 2008 - BCN 4587C Green Construction and Sustainability**, Dr. David Lambert, Mr. David Birkelbach, LEED AP and CM for the construction of the UNF Student Union gave a tour of the building focused on LEED certification issues.

**Fall 2008 – BCN 4931 Seminar: Construction Management. Mr. James Sorce took thirty students to observe the construction of UNF’s new Student Union.**
3. List the guest lecturers for the past year. Include the lecturer's name, topic, date, and course of meeting.

**Spring 2010**

03/31/10: **BCN 4931** Seminar: Construction Management: Mr. Sorce invited Lou Fiore, Turner Construction Company Senior Project Manager on the Duval County Courthouse project to speak on that project.

01/12/10 – Mr. James Sorce invited Lee Arsenault, Bill Wilson, Dennis Ginder, Sean Junker, Jon Roberts, Greg Matovina, Glenn Layton to offer input on the NAHB team competition entry.

01/21 2010 – **BCN 4709** Construction Project Management Capstone: Dr. John Dryden invited Dan Hughes, Doug Register, Tom Mantia to discuss the Jacksonville National Cemetery project.

01/21/10: **BCN 4709** Construction Project Management Capstone: Dr. John Dryden invited Sonide Simon and Pete Olsen to discuss the Beaches Habitat for Humanity residential project.

01/26/10 - **BCN 4709** Construction Project Management Capstone: Dr. John Dryden invited Doug Register, Dan Hughes, Tom Mantia, Sharan Bernier, Don Guthrie, Michael Rothfeld – all members of North Jacksonville Rotary Club - to discuss their collaboration on the Jacksonville National Cemetery project.

02/11/10: **BCN 4709** Construction Project Management Capstone: Dr. John Dryden invited Sonide Simon and Pete Olsen to discuss the Beaches Habitat for Humanity residential project.

03/02/10: **BCN1210C** Construction Materials: Dr. Jiang invited Marshall Hall to speak on roofing materials.

**BCN 4873C** Commercial Construction II: Dr. Carol Woodson also invited Micah Barth, Project Manager from the Stellar Group to give a lecture on managing productivity factors on a commercial construction project.

**BCN 4708** Constructions Contracts and Document: Dr. Carol Woodson invited Chris Cobb, Construction Attorney, from Tritt & Henderson to lecture on the mechanics of liens and disputes in construction.

**BCN 4720** Heavy Civil Construction I: Dr. Aiyin Jiang invited Christine Beaudoin from Kiewit to lecture on a CONRAC Road, Atlanta I285

**Fall 2009**

**BCN 4871C** Commercial Construction I: Dr. Carol Woodson invited Christine Beaudoin from Kiewit to speak. Dr. Carol Woodson also invited Micah Barth, Project Manager from the Stellar Group to give a lecture on a day in the life of a project manager.

**BCN 4730** Construction Safety: Dr. Carol Woodson invited Christine Beaudoin from Kiewit Corporation to lecture on the safety program of a large corporation.


**Summer 2009**

May 2009 BCN 4591C -Section 12815 Mechanical and Electrical Systems: Dr. Soares invited Dr. Merckel to give one week of lectures on Electricity resulting in a complete success due the practical demonstrations he brought to the class.

June 25, 2009 - BCN 4931 Seminar: Construction Management: Mr. James Sorce invited Glenn Layton, Woodside Homes of North Florida, to speak on the state of the construction industry and the status of the residential market in particular.

May 2009 BCN 4591C -Section 12815 Mechanical and Electrical Systems. Dr. Soares invited Dr. Merckel to give one week of lectures on Electricity resulting in a complete success due the practical demonstrations he brought to the class.

June 25, 2009 - BCN 4931 Seminar: Construction Management. Mr. James Sorce invited Glenn Layton, Woodside Homes of North Florida, to speak on the state of the construction industry and the status of the residential market in particular.

BCN 4708 Construction Contracts/Documents: Dr. Carol Woodson invited Chris Cobb from Tritt, Franson, Henderson, & Iseley P.A. to speak.

BCN 4873 Commercial construction II: Dr. Carol Woodson invited Micah Barth, Project Manager from Stellar to speak.

**Spring 2009**

January 2009 - BCN 4931 Seminar: Construction Management. Mr. James Sorce invited Christine Beaudoin, Kiewit, to speak on Heavy Civil construction and the state of the construction industry.

January 2009 - BCN 4612 Advanced Construction Estimating. Dr. John Dryden invited Mr. David Simons from Haskell Construction to speak on the estimating process at Haskell.

January 2009 - BCN 4709 Construction Project Management Capstone. Dr. John Dryden invited Ms. Lisa Cogan from Business Support Inc. to discuss starting a construction company in Florida.

January 2009 - BCN 4709 Construction Project Management Capstone. Dr. John Dryden invited Mr. Jack Diamond from Rink Design to speak on planning for owner design review meetings.

Spring 2009 - BCN 3991 – Construction Forensics I, Dr. David Lambert invited Chief Lorin Mock, Director of Emergency Management, Duval County, to speak to his class.

February 2009 - BCN 4709 Construction Project Management Capstone. Dr. John Dryden invited Mr. Andy Eckert from Duval County Public Schools Facilities Design and Construction to present a lecture on permitting issues.

March 2009 – BCN 4709 Construction Project Management Capstone. Dr. John Dryden invited Mr. Paul Hoffman from Auld and White Construction to discuss Project Close-out.
March 2009 – BCN 4594C Green Building II. Dr. Carol Woodson invited Dr. David Lambert to give a lecture on Embodied Energy and “Energy”.

March 2009 – BCN 4720 Construction Scheduling and Planning. Dr. Aiyin Jiang invited Mr. Bill Stinson from Elkins Constructor, Inc. to give a lecture on scheduling and planning for the Student Union project at University of North Florida.

April 2009 - BCN 4709 Construction Project Management Capstone. Dr. John Dryden invited Ms. Carol Hopson from C&D Bonds & Insurance to speak on Insurance, bonds, and lien release requirements in construction.
Section VIII
VIII. PUBLISHED INFORMATION TO THE PUBLIC

A. Selected Material

1. List all program materials prepared for dissemination to the public.

There is a wide variety of CM material published for public consumption. Content in these published materials include program objectives, admission requirements, program assessment measures used, student achievement and types of employment for CM graduates. For example:

UNF Construction Management Website (advising, admission requirements, program of study, etc.)
CM Department Brochure (overview of CM program)
College Brochure (overview of academic programs including CM)
CM Newsletter (student achievements, employment opportunities, etc.)
UNF Catalog (admission requirements, program of study, course descriptions)
CM Academic Learning Compact (mission, learning outcomes, assessment approaches, types of employment)
UNF Career Services (career opportunities, job placement, etc.)
UNF Advising Brochure (program of study counseling, internship guidance, etc.)

UNF CM Website (www.unf.edu/cecc/bcm)
NOTICES

* 31-Jul-2009: Application Deadline for Marine
* Corporal Joshua Watkins Memorial Scholarship
* Study Abroad - Fall 2009
* Employment Opportunities

SCHOOL SPOTLIGHT

* Summer 2009 CM Newsletter
* Past Spotlights

Dr. Maged Malek
Chair, BCM

“The UNF Construction Management program offers a management-oriented, technical curriculum that prepares students for a variety of positions in the construction industry.” MORE »

CM Department Brochure

Academic Excellence

The UNF Construction Management Department offers a theoretical and practical education that prepares students to be active and valuable members of the construction industry after graduation. The program includes rigorous academic courses, participation in research programs, laboratory experimentation under the supervision of talented professors, and practical hands-on learning through internships and community-based learning initiatives. The UNF Construction Management Department has consistently earned accreditation by the American Council for Construction Education (ACCE), because of the program’s level of educational excellence.

Community-Based Transformational Learning Opportunities

Students practice their knowledge of construction management under the supervision of professors by serving the community on service projects. These transformational learning opportunities enable students to serve the community and simultaneously enhance their education through cooperation with professionals in the community where they serve. Community-based learning projects are imbedded in the curriculum and are a major emphasis in classes such as the senior Capstone class.

Industry Support

Because of the valuable services the UNF Construction Management Department provides to the community, many companies reciprocate by supporting departmental activities such as student competitions, studies abroad, lab sponsorships, mentoring of classes, and awarding scholarships. We offer students a unique educational experience that combines the theoretical with the practical to make UNF Construction Management graduates more valuable to industry and to the community.

Study Abroad Programs

The Construction Management Department at UNF is unique in championing international construction through study abroad classes. These international experiences prepare students for entry into the global construction industry. Close cooperation and strong ties with universities and industry partners in Canada, Dubai, Egypt, and France enhance the students’ knowledge of the international construction market. The expansion of these global relationships provides the foundation for a future Construction Management master’s degree in International Construction.
however, the student selects a minor other than Business Administration. Depending on the choice of a minor, graduates are prepared for careers in the design, development, and management of computer applications in specific fields, such as medicine, law, education, communications, and criminology.

---

**Information Systems Track**

The Information Systems track is accredited by the Computing Accreditation Commission of ABET. A Business Administration course sequence is an integral part of the track. Computer coursework includes data and file structures, distributed processing and networking, database processing and administration, office automation, expert systems and decision support systems, human factors, user interface design, and other courses designed to support computer-based solutions to business problems.

---

**Information Technology Track**

The Information Technology track prepares students to excel in planning, configuring, implementing and maintaining computing infrastructures. Options within the track include mobile computing, computer networking, and computer security administration.

---

**Degree**

**Bachelor of Science in Building Construction**

The Department of Construction Management (CM) provides the student a program of study that prepares one for a variety of positions in the construction industry. The program consists of a curriculum regarding building construction, computer concepts, business, and general education. A graduate from the CM department normally finds employment in the residential, commercial construction, or in the heavy civil industry. Typical employment opportunities include cost estimator, assistant project manager, assistant superintendent and field engineer. The BSC in construction management is accredited by the Council of Construction Education (ACCE).
CM News Letter –
The Construction Management Department produces a newsletter each term. The newsletters are posted and archived on the CM website (http://www.unf.edu/ccec/bcm/newsletters/) and are emailed to over 250 industry contacts. Newsletters include information on CCEC Employer showcases, Faculty Updates, Community Based Learning activities, updates on student activities with professional organizations such as Sigma Lambda Chi, scholarships awarded, and industry sponsors. Links to current media coverage of departmental activities are included in the newsletter, also.

EMPLOYER SHOWCASE –
The College of Computing, Engineering and Construction Spring 2010 Employer Showcase was held on March 9 in the UNF Student Union ballroom. Thirty construction, engineering and computing employers attended the Showcase. This biannual recruiting event is the premier networking event for students, construction industry project managers, human resources representatives and principals of computing, engineering and construction firms. 280 CCEC students and alumni attended the event. For information about the CCEC Employer Showcase or for assistance recruiting students and graduates of the College of Computing, Engineering and Construction, contact Rebecca Johnson, Career Coordinator at 904-620-2955 or email: rebecca.johnson@unf.edu

FACULTY UPDATE –

Student Exchange Program: Egypt - Dr. Mauricio Gonzalez and Dr. Mag Malek worked together to establish a student exchange program between UNF and the American University in Cairo.

Infrastructure Research Center - Dr. Mag Malek and Dr. Daniel Cox initiated the establishment of the Infrastructure Research Center with the American University of Cairo (AUC). The effort between UNF and AUC received approval from UNF President, John Delaney, Provost, Dr. Mark Workman, and CCEC Dean, Dr. Peter Braza. The Center will be funded by grants from USAID, NSF International, and regional sponsors. Faculty from multiple disciplines at UNF and AUC will participate in the research. Dr. Malek and Dr. Cox will serve as co-directors of the Center.

Faculty Study Abroad: Korea, China - Dr. John Dryden and Dr. Aiyin (Erin) Jiang received UNF International Grants for travel to Korea and China, respectively, to develop study abroad courses.

ACCE - Dr. Mag Malek was elected to the Board of Trustees of the American Council for Construction Education (ACCE), the accrediting agency for construction academic programs in the USA.
COMMUNITY BASED LEARNING – Container Project – Construction Management students in Dr. Mag Malek’s Industrial Construction II TLO class are applying their knowledge and skills to the task of refurbishing, modifying, and transforming surplus shipping containers to serve a myriad of purposes such as pavilions, affordable housing, shelters, classrooms and libraries. This community-based learning project, supported partially with funds from UNF’s Transformational Learning Opportunity (TLO) program, affords students an opportunity to learn from and work with professionals in the industry who have experience with this form of construction. In managing and executing this project, and building a final product that will be used to meet a community need, the students will develop and strengthen their community engagement skills.

Dr. Malek and Dr. David Jaffee, UNF Assistant Vice President for Undergraduate Studies, worked to bring together community partners that include the University of North Florida, Jaxport, Horizon Lines, and AGC Transport and Services. As is the case in most maritime port communities, Jacksonville and Jaxport have a surplus of shipping containers. Many of these older surplus containers can no longer be used for the purposes of shipping cargo. They are therefore stacked, stored, and warehoused throughout Jacksonville. This project effectively recycles this resource and converts the containers into a functional and usable form for meeting other community needs. In this way, the project contributes to the sustainability of the port economy.

News4Jax, Jacksonville Business Journal, and Florida Times Union covered the story locally and the story was picked up by CNN. Thanks to Mick Barr of Barr Design for the great photos on the CM Web Gallery and to CCEC Senior Broadcast Technologist, Elaine Poppell for the Container Project Video on the CM website. CM Students participating in this project are Henry Alsandor, Jeffrey Brown, Eric Canoura, Aaron Cavinder, Joseph D’Acquisto, Chris Diehl, Andrew Dunmire, Joseph Greene, Jeremy Lord, Paul Ly, Juan Orozco, Jake Seaton, Ryan Sparrell, Ryan Stallings, Broughton Webb, and Matt Young.

Jacksonville National Cemetery - Construction Management students will work with the North Jacksonville Rotary Club on an educational center at the Department of Veterans Affairs-owned Jacksonville National Cemetery. This community service project will serve as the CM Capstone project in which students will develop their budgeting and scheduling experience as they work with industry leaders. Students have already developed conceptual designs and budgets for the 10,000 square foot building.
Study Abroad Egypt –

Dr. Malek and James Sorce conducted a study abroad to Egypt in December 2009. Twenty Construction Management students visited the American University in Cairo where they attended construction lectures, visited the Pyramids and Sphinx at Giza, the Valley of the Kings, Luxor Temple and the Aswan High Dam. During this visit, the students studied resource allocation, how the Egyptian culture affects negotiations and the construction process, as well as construction methods and problems specific to the construction industry in the Middle East. Upon their return, students were required to prepare a report using their collected data, photographs, and research on key aspects of the country’s history, culture, bidding and estimating procedures, project delivery methods, project management and other business practices. You can view more photos from the Egypt trip on the CM Web Gallery.

Student Exchange France –

The Construction Management Department hosted 20 Construction Management students and faculty from the Construction Management program of Lycee Livet, Nantes, France in February 2010. Activities around the UNF campus included a campus tour, lunch in the Osprey Café and an Ospreys basketball game. The group attended Construction Management classes in Construction Safety and Construction Techniques, and even attended Dr. Schwam-Baird’s French class. Turner Construction Company gave the students a site tour of the new Duval County Courthouse project. The students also toured an asphalt plant and a highway overpass project by Hubbard Construction Company.

Dr. Aiyin (Erin) Jiang, along with Construction Management (CM) students Benjamin Cashen, Kaitlin Knox, Joseph Montello, David Blackwelder, and Ryan Kirk checked out heavy construction equipment at Ring Power CAT in St. Augustine, March 5, 2010. The students were also trained in operating construction equipment via computer simulator.
SIGMA LAMBDA CHI – Fifteen CM students were inducted into Sigma Lambda Chi (SLC), the construction honorary society, for their outstanding academic performance. The 2010 inductees are: Derek Hedman, President, Christine Short, Vice President, Kyle Boivin, Treasurer, Kyle Allen, Joseph D'Acquisto, Brandon Facini, Lauren Iglio, Ryan Kirk, Kaitlin Knox, Paul Ly, Jeffrey McFarland, Van Morgan, Brian Mulvaney, Joseph Shepard and Ryan Stallings. Dr. Mag Malek serves as the SLC faculty advisor.

ALUMNINET – Are you a Construction Management alumnus? Over 70 CM alumni are listed on the Construction Management Department Alumninet. This is your opportunity to stay in touch with other grads! Post your contact information, your current employment information and link to your favorite social networking site. If you are a Construction Management alumnus, let us hear from you. If you know a CM graduate who’s not on the Alumninet, be sure to send them our way!

SCHOLARSHIPS – The American Concrete Institute Florida First Coast Chapter Scholarship is awarded each spring. Congratulations to CM student Marki Riccaboni who received this merit-based scholarship. Two new scholarships will be offered, thanks to Sauer, Inc. and Turner Construction Company. Information and applications are available here.

CM ADVISORY COUNCIL MEMBERS -  
Pat Arrington, R. J. Griffin & Company  
Steve Auld, Auld & White Constructors, LLC  
Scott Baldwin, Stellar  
Christine Beaudoin, Kiewit  
Jeffrey W. Blount, Haskell  
Bill Bocchino, STT Construction Group  
Travis Church, Hubbard Construction Company  
Paul Cook, Sauer Incorporated  
David Hacker, Construction Specialties of North Florida, LLC  
Dan W. Haskell, Associated Builders and Contractors  
Glenn Layton, Woodside-Homes  
David Mantia, Auld & White Constructors, LLC  
William Pitts, WG Pitts Company  
William Schaet, Barton Malow Company  
Ryan Schmitt, Petticoat-Schmitt Civil Contractors, Inc.  
Mary Tappouni, Breaking Ground Contracting  
Gregory Zechman, Sauer Incorporated

SPONSORS – “Thank You” to the following supporters of the Construction Management program:  
Lennar – Construction Management Student Competition  
Sauer, Inc. – BCN 3611 - Construction Cost Estimating course and Sauer Scholarship  
Turner Construction Company – Turner Scholarship

For information on becoming a course sponsor, please contact Dr. Mag Malek, Chair, Construction Management Department, 904-620-1123 or mmalek@unf.edu.

SCHOLARSHIPS – Thirteen Construction Management students received merit based scholarships during the Fall 2008 and Spring 2009 semesters. There are six endowed and three annual scholarships available to Construction Management students for the Summer 2009/Fall 2009 semesters. The application deadlines range from July 31, 2009 to August 24, 2009 and December 31, 2009. Scholarship information and applications are available here: http://www.unf.edu/ccec/scholarships/.
Bachelor of Science in Building Construction: (120 credit hours, w/ a min 60 upper level hrs)

- All course work must be completed with a grade of ‘C’ or better, unless otherwise noted.
- Once enrolled at UNF, any remaining prerequisites for the major / minor must be completed at UNF.

Prerequisites
Building Construction Prerequisites: (12 requirements - 38.0 semester hours)(F07--...)
- MAC2233 3 G(M) Calculus for Business
- STA2023 3 G(M) Elem Statistics-Business
- CGS1100 3 Computer Applications for Busi
- CGSX531 or 1570 are acceptable alternatives to CGS1100.
- Any course covering the appropriate software may be approved for this requirement if approved by an advisor.
- ECO2013 3 Principles of Macroeconomics
- ECO2023 3 Principles of Microeconomics
- ACG2021 3 Prin of Financial Accounting
- BUL3130 3 Legal Environment of Business

PHYSICS I Physics I requirement:
- PHY2053+L Algebra Physics I and Lab
  * PHY2004 + Lab may be substituted.

PHYSICS II Physics II requirement:
- PHY2054+L Algebra Physics II and Lab
  * PHY2005 + Lab may be substituted.
# Index of Academic Learning Compacts

<table>
<thead>
<tr>
<th>Academic Learning Compacts Home Page</th>
<th>Accounting - Accounting (B.B.A.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are ALCs?</td>
<td>Anthropology - Anthropology (B.A.)</td>
</tr>
<tr>
<td>UNF ALC Policies and Procedures</td>
<td>Art - Art (B.A.)</td>
</tr>
<tr>
<td>Alphabetical Index of ALCs</td>
<td>Art Education - Art Education (B.A.E.)</td>
</tr>
<tr>
<td>Index of ALCs By College</td>
<td>Athletic Training - Athletic Training (B.S.)</td>
</tr>
<tr>
<td>Contact Us</td>
<td>Biology - Biology (B.S.)</td>
</tr>
<tr>
<td></td>
<td>Building Construction - Building Construction (B.S.)</td>
</tr>
</tbody>
</table>

## BUILDING CONSTRUCTION

### Mission Statement

To educate and develop construction professionals through rigorous, relevant, accredited degree programs offered by faculty devoted to teaching, scholarly activities, services and community involvement. Values 1. We believe that excellence in teaching, research, community service projects, and an active working relationship with our industry is essential to the development of successful construction professionals. 2. We believe that cultural awareness and a global perspective, achieved through study abroad is critical to the complete education of construction professionals. 3. We believe that effective construction education: a. Requires interaction between faculty, students, and industry inside and outside the classroom. b. Provides opportunities for transformational learning activities, such as internships, service learning, and robust engagement with our industry. c. Emphasizes career development and placement opportunities.

### Student Learning Outcomes

UNF Building Construction graduates will be able to:

#### Communication Skills

- 1. Communicate effectively and conduct oral presentations.
- 2. Write succinctly and generate professional reports.
- 3. Use discipline oriented software to communicate with subcontractors, vendors and other entities.
WHAT CAN YOU DO WITH A MAJOR IN...
CONSTRUCTION MANAGEMENT

Construction Managers are responsible for planning and directing construction projects. They inspect the construction, alteration, and repair of structures to make sure that they meet the terms of the regulations and contract specifications. They manage the equipment and any permits, licenses and contracts needed to carry out the specific plans of a construction project. They work for federal, state, or local governments and usually work in settings such as construction firms, architectural offices, governmental agencies, developmental firms, and at colleges and technical schools.
PREREQUISITES FOR INTENDED MAJORS

COLLEGE OF BUSINESS ADMINISTRATION

ACCOUNTING/ECONOMICS/FINANCE/FINANCIAL SERVICES/MARKETING/MANAGEMENT/INTERNATIONAL BUSINESS/TRANSPORTATION:

MAC 2233 3.0 G(M) Calculus for Business
or
MAC 2311 4.0 G(M) Calculus I
STA 2023 3.0 G(M) Elem Stats-Business
CGS 1100 3.0 Computer Application for Business

BUILDING CONSTRUCTION MANAGEMENT:

MAC 2233 3.0 Calculus for Business
STA 2023 3.0 G(M) Elem Stats-Business
ECO 2013 3.0 Principles of Macroeconomics
BUL 3130 3.0 Legal Environment of Business
ACG 2021 3.0 Prin Financial Accounting
BCN 1210C 3.0 Construction Materials
BCN 1251 3.0 Construction Drawing I
BCN 2405 4.0 Structures
PHY 2053 3.0 Algebra Physics I
PHY 2053L 1.0 Algebra Physics I Lab
PHY 2054 3.0 Algebra Physics II
PHY 2054L 1.0 Algebra Physics II Lab
CGS xxxx 3.0 Computer Application

NOTE: Additional pre-requisites may be required (pending selection of "minor").
B. Method of Material Selection

1. List any institutional requirements governing publication of materials (if appropriate).

UNF CM WEB Site
The CM Department is responsible for the content on the UNF CM web site. UNF provides general guidelines on WEB site style and use of UNF logos (http://www.unf.edu/ia/pr/marketing_publications/).

UNF Catalog
UNF has a formal review and approval process for any modifications to the undergraduate catalog. CM recommended changes resulting from the annual faculty assessment process must be approved by the College Curriculum Committee and the UNF Faculty Association. Approved changes are then reviewed by the UNF Provost Office and the Florida Board of Governors. The approved changes are then posted to the UNF catalog.

CM Department Brochure
The content of the CM brochure is the responsibility of the department.

College Brochure
The Dean’s Office specifies the general guidelines and format for the College Brochure. The CM Department is responsible for the CM content.

2. Describe the process used by the construction program to select materials for publication.

Various publication guidelines are provided by the College and the University. The CM Department also publishes its own materials such as brochures and newsletters. In all cases, the CM Department is responsible for the CM content.

C. Methods of Distribution

1. Provide a list of sources used to publish program information.

The University publishes the catalog via the WEB. A paper catalog is no longer published by the University.

The CM published content is created by members of the CM Department. The College and the University handle the administration of publishing. In the case of the CM WEB site, the Dean’s Office provides technical support. The CM Department specifies the content.

2. Describe your program’s method of informing the public that this material is available.

The CM Department relies primarily on the UNF CM WEB site (http://www.unf.edu/ccec/bcm/) to inform the public. However, the CM Department also publishes a newsletter
which is emailed to members of the construction industry.

The CM Department participates in various career fairs sponsored by the College and the University. http://www.unf.edu/dept/cdc/jobfair/ccecsowcaseemp.html

The College has a periodic Employment Showcase (job fair) in which the CM Department is a major participant. The Employment Showcase is heavily subscribed by the construction industry.

Both the University and the Department participate in various advising activities about the Construction Management academic program.
Section IX
IX. GENERAL ANALYSIS

A. Program Quality Assessment

1. a. Describe the academic quality plan in terms of inputs and outcomes, as it relates to program delivery, teaching, research, and service.

The annual assessment provides a basis for discussion and review of the CM program and curriculum. Feedback on student outcome assessment tools are collected throughout the year from various sources, including direct outcome assessment tools, i.e., the newly instituted AIC-CCC Associate Constructors exam (UNF is an official exam site.), student competitions, as well as indirect outcome assessment tools including graduating senior surveys, surveys of CM Advisory Council members, student internship supervisors, and CCEC Employer Showcase industry representatives. The Chair, faculty, adjuncts, advisor, staff and administration associated with the CM program review the assessment numerous times. As the need for changes in the CM program are identified during the review process, changes are initiated and scheduled, as necessary, in curriculum, facilities, advising procedures, student activities, etc.

Closing the Loop Policy:
In the spirit of self-assessment, the CM Department performs a formal program and curriculum review once per year in the summer. Faculty and staff in the CM program participate in this discussion. UNF requires all proposed curriculum changes be submitted for review and approval by mid-October of each year. UNF approved changes are implemented in the following academic year.

The CM faculty members vote on suggested program and curriculum changes. Approved changes require a majority vote of the CM faculty prior to submission to the College Curriculum Committee and the UNF Faculty Association. Approved proposed change processing follows the university calendar. For the CM program per the UNF calendar:

1. Discussions are held during the summer among the faculty on the CM program using various feedback mechanisms such as the Graduating Senior Surveys.

2. CM faculty vote on proposed changes during August.

3. APC forms requesting the departmental approved curriculum changes are prepared.

4. In September, the College Curriculum Committee meets to review and approve all proposed curriculum changes in the college.

5. Changes approved by both the department and the college are submitted to the Faculty Association in September.

6. CM program and curriculum approved changes are implemented in the following fall.
Samples of various surveys from various stakeholders reporting results or outputs such as advising, facilities, curriculum, teaching, and support programs are shown in Volume II, Appendix C.

CLOSING THE LOOP

University of North Florida Continuous Improvement Model

1. Develop learning objectives.
1. Check for alignment between curriculum and the objectives.
3. Develop an assessment plan.
4. Collect assessment data.
5. Use results to improve the program.
6. Routinely examine the assessment process and correct as needed.

Goals are derived from the mission statement and student outcome assessments are then generated. These student outcome assessments are measured and assessed using a variety of tools that are of a different nature; some are direct measures and some are indirect. In any case, they are translated into numeric, crisp values and measured during a specific time frame (every term).
1. b. Describe how outcome assessment results are correlated with mission, goals, program content, and outcomes to implement change where needed.

The various surveys from the academic year are reviewed by the CM faculty. Assessment results are used to assess various CM dimensions such as mission, goals, curriculum, advising, and facilities. Proposed changes are voted on by the faculty. Approved changes are implemented for the following academic year. For example, the recent review of the CM program:

**CM Program Goal 1**

1. The Department will develop a cooperative agreement with international universities serving our Construction Management graduates, and maintain a high quality Bachelor of Science program in Building Construction that will enable graduates to achieve their maximum potential in the building construction field. The Department will broaden our graduates’ horizons through local community based learning service projects and through international study abroad classes.

*Action 1:* The CM Department has developed and maintains a qualified degree program in Building Construction based on program-specific national accreditation criteria.

*Outcome:* The Bachelor of Science in Building Construction will maintain its accreditation.

*Evaluation:* The Bachelor of Science in Building Construction is presently accredited by the American Council for Construction Education (ACCE) without any concerns, weaknesses or deficiencies noted.

*Continuous Improvement:* The CM Department has a program of self assessment and continuous improvement. In addition, the CM Department has initiated a self evaluation study in preparation for the next ACCE accreditation review in 2011.

*Action 2:* The CM Department will develop and maintain graduate programs based on the undergraduate program in Construction Management.

*Outcome:* The CM Department will serve the First Coast Region, the State of Florida and the nation by providing appropriate graduation education.

*Evaluation:* The CM Department, in partnership with the Coggin College of Business, now offers an MBA with a Construction Management concentration.

*Continuous Improvement:* The CM Department continues to interact with employers on developing a Master of Science degree in Construction Management.

**CM Program Goal 2**

2. The Department will focus its resources on the continuing development of a construction management program of the highest quality in keeping with the needs of our dynamic industry.
**Action 1:** The CM Department will recruit outstanding students and provide comprehensive student advising.

**Outcome:** Students new to the Construction Management program will be prepared to excel in the academic program.

**Evaluation:** There have been substantial increases in the number of students who wish to enroll in the Construction Management program. The department is currently reviewing the possibility of raising the GPA program admission standards.

**Continuous Improvement:** The CM Department added a full time Instructor/Advisor to ensure students receive comprehensive advising on their academic program.

**Action 2:** The CM Department will expand on its distance learning initiatives.

**Outcome:** Construction professionals and working students with time constraints can more easily pursue their educational objectives.

**Evaluation:** The CM Department has been expanding the number of courses per semester that offer a distance learning component. Today, the CM Department offers 4-5 courses per semester via distance learning.

**Continuous Improvement:** The CM Department distance learning courses are very popular and usually filled to capacity. The department is exploring methods to expand its offerings in distance learning.

**CM Program Goal 3**

3. The Department will offer degree programs that have relevance to the needs of the community in areas such as life-long learning, ethics, and professional development.

**Action 1:** The CM Department will prepare its graduates for immediate entry into the construction profession or for graduate education.

**Outcome:** The Construction Management students will compete favorably with students from other institutions in securing internships and permanent employment.

**Evaluation:** Internship placement and employment data is solicited from students, graduated students and employers.

**Continuous Improvement:** Internship employers provide feedback on student job performance. Alumni are periodically solicited on their views of the program and their career. The information is used to evaluate the academic program.

**Action 2:** The CM Department will prepare students to appreciate the importance of continuing education and professional certifications.
Outcome: The CM Department emphasizes the importance of life-long learning and professional certifications after graduation.

Evaluation: The CM Department offers an OSHA Safety certification part of the curriculum. Currently students are also encouraged to complete other professional exams such as the Florida Contractor’s Exam. The CM faculty members have proposed a new graduation requirement that each student must successfully pass a certification exam for the American Institute of Constructors, the Associate Constructor (AC) or the Certified Professional Constructor (CPC).

Continuous Improvement: The CM Department utilizes the Graduating Senior Survey and the Alumni Survey to obtain feedback from former students on their professional certifications.

**CM Program Goal 4**

4. The Department will maintain an active presence through its partnerships in the northeast Florida community and surrounding region.

**Action 1:** The CM Department will focus its resources on initiatives designed to meet student and community needs.

**Outcome:** The Construction Management students will be able to experience transformational learning opportunities.

**Evaluation:** Construction management students have many learning experiences beyond the classroom. For example, every student is required to complete an Internship. Likewise, the academic program has added a community service requirement. Many students are supported in various student design competitions. A study abroad program has been initiated for CM students. The CM faculty members continue to modernize the curriculum such as the experimental courses on construction forensics.

**Continuous Improvement:** Students complete various surveys on their experiences. Internship employers provide feedback on student job performance. The information is used to make enhancements to the academic program.

**Action 2:** The CM Department will provide opportunities for construction industry donors to contribute resources for the enhancement of the academic program.

**Outcome:** Construction industry donors will receive recognition for their financial gifts.

**Evaluation:** State monetary support essentially does not provide funding for activities beyond the classroom. Recently the construction industry has made substantial contributions to the academic program. This has enabled the CM Department to offer experiences beyond the classroom. For example, these funds are use to help defray student expenses on the new Study Abroad Courses and competitions.
Continuous Improvement: The CM Department will continue to seek additional funds to support student activities beyond the classroom.

**CM Program Goal 5**

5. The Department will recruit and retain exceptional faculty and staff to ensure quality academic programs.

*Actions 1:* The CM Department will periodically recruit for the best personnel available.

*Outcome:* Construction Management faculty and staff will be paid competitive wages and will have a pleasant working environment.

*Evaluation:* In 2007-08, the Department successfully recruited two new permanent faculty members and hired one additional faculty member in 2008-09.

Continuous Improvement: The calculated teaching load for the CM Department shows that approximately three additional permanent faculty members are required to conform to the university’s goal of maintaining small to medium class sizes. The teaching needs continue to be presented to the administration.

**CM Assessment and Achievement of Program Goals**

The CM Department has established a systematic process of self-assessment and continuous improvement. This is performed on an annual basis as a means to assess how well the program is doing in meeting its program goals and how the CM students are meeting the expected Educational Outcomes. The Self Evaluation Volume II, Appendix C shows recent survey results from various stakeholders.

2. Provide a copy of all forms used in the program assessment process. Input from students should be reflected in summary statistics of class and faculty evaluations and documentation of educational achievement, verifiable and in appropriate combinations of senior projects, reviews of student portfolios, and composite test results as evidentiary examples. Graduate data should include job placement rates and employer evaluations.

A formal process for self-assessment and continuous improvement has been defined and implemented. During the course of the academic year, various survey instruments are utilized to provide feedback and input on the CM academic program. These survey instruments and their summaries are shown in Volume II, Section C, Sample Surveys. These various inputs are reviewed by the CM faculty and the college administration. The faculty conducts detailed discussions during May - August and then recommended program changes are voted on by the faculty. With a majority vote, a formal curriculum change request is prepared by the CM Department for review and approval by the College Curriculum Committee and the UNF Faculty Association in the September time frame. With UNF approvals completed, the program changes are then sent to the Florida Board of Education for review. Approved academic program changes are implemented in the following academic year.
Student works such as projects exams, presentations along with employer evaluations of student job performance in the context of Expected Educational Outcomes may be found in the Course Journals.

A multiplicity of formal and informal methods and techniques are employed to generate feedback and recommendations on the UNF CM academic program. The methods and techniques used in the CM Academic Quality Assessment are shown listed below. The specific forms and the latest assessment results are shown in Volume II, Section C, Example Assessment Surveys.

**Instructional Satisfaction Questionnaire**
A formal student assessment, Instructional Satisfaction Questionnaire (ISQ) is conducted of the instructor and the course each semester. The survey instrument is shown Volume II Self Evaluation, C. Example Assessment Surveys.

**Graduating Senior Survey**
Feedback is solicited from graduating seniors each semester on various aspects of the academic program such as advising, curriculum, student clubs and facilities. The survey instrument is shown in Volume II Self Evaluation, C. Example Assessment Surveys.

**Industry Survey**
Professional members of the regional construction companies are solicited for their feedback and views on the academic program. This is typically done twice per year. The survey instrument is shown in Volume II Self Evaluation, C. Example Assessment Surveys.

The course surveys and the views of industry and the graduating seniors are key inputs to the CM continuous assessment and improvement process. However, there are additional sources of input including:

**UNF Periodic Program Reviews**
In 2009 the Department retained an external reviewer, Dr. Roger Liska. The review was positive but included a number of recommendations, all of which have been addressed. All recommended changes meet ACCE requirements.

**CM Masters Degree Surveys**
The CM Department has conducted surveys with industry on the content of the masters program. It is clear that the construction industry weighs business skills heavily. As a result, at the request of the construction industry, UNF began offering the MBA with a concentration in Construction Management in fall 2004. Additionally, the CM Department developed exchange and graduate programs in partnership with EPF Graduate School of Engineering, Paris, France (EPF) and the American University of Cairo, Egypt (AUC), which is ABET accredited.

**Internship Evaluations**
Each student must participate in an Internship as part of his/her academic program. The employer is asked to evaluate the student’s job performance. In recent times, the evaluation includes the Expected Educational Outcomes of the CM program. Thus, the Department has a
direct measure on how well trained the students are in terms of the academic program’s desired Expected Educational Outcomes.

**Informal Student Feedback - Student Advising**
There is a full time CM advisor, Mr. James Sorce, Instructor/Advisor. Mr. Sorce is active in securing student feedback through the graduating senior surveys and is an active participant in CM Departmental discussions. Mr. Sorce serves as the focal point in the Department in preparing and processing curriculum change requests each fall.

**Informal Student Feedback - Open Door Policy**
The CM faculty, the Chair and the Dean have an open door policy. Students are welcome in at any time to discuss any topic. These conversations are factored into the CM faculty deliberations on the program. The Chair on occasion also attends student club meetings and visits the classroom.

**Informal Industry Feedback – Dean’s Industrial Advisory Committee**
The Dean has an Industrial Advisory Council for the college. Members of this committee include a number of senior executives from the regional construction companies. Feedback from the Dean is shared with the CM faculty.

**Informal Industry Feedback – Faculty Interaction**
The CM faculty members receive feedback from industry through various forums such as the CM Advisory Council meetings, the CCEC Employment Showcase (job fair), and the year-end Hardhat Banquet.

**Alumni Feedback**
The CM Department developed the AlumniNet, which is posted on the CM webpage (http://projects.ccec.unf.edu/cm/alumni/index.php). This is a forum where CM graduates can network among themselves. It also is a means to develop a database of contact information for future alumni surveys. In addition, there is a fair amount of informal feedback to the CM from students working in the industry. A large number of CM Advisory Council members are CM alumni. Feedback includes new topics that should be included in the curriculum, new texts that might be of interests, job openings and other opportunities.

**Other UNF Assessment Instruments**
The University has a number of other assessment instruments used throughout the academic year including faculty annual evaluations, evaluation of administrators by the faculty and an annual program report to the Provost.

At the completion of the annual CM faculty review of the various assessment inputs during May - June, CM faculty-approved recommendations are brought forward to the College Curriculum Committee and the UNF Faculty Association for review and approval. With approval of the UNF Faculty Association and a validation review by the Florida Board of Education, the approved academic changes are implemented in the following academic year.
3. Provide a summary of the most recent assessment cycle, including a description of the process used to evaluate both inputs and outcomes, and a summary of the results.

Based on the most recent outcome assessment results and statistical numbers tallied from the surveys obtained, the faculty met, analyzed the feedback, and voted for the following changes in the curriculum for the 2010/2011 year. The college curriculum committee will meet to approve curriculum changes for the 2010/2011 year during fall term 2010.

**Commercial Construction II**
Delete this course given we are merging the content of the two part series in Commercial Construction into one course. This will change the makeup of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals.

**Green Const and Sustain II**
Delete this course given we are merging the content of the two part series in Green Construction and Sustainability into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Housing and Land Dev II**
Delete this course given we are merging the content of the two part series in Housing and Land Development into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals.

**Industrial Construction II**
Delete this course given we are merging the content of the two part series in Industrial Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long-term goals.

**Heavy Civil Construction II**
Delete this course given we are merging the content of the two part series in Heavy Civil Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. Furthermore, the new course BCN 4xxx "Construction Equipment" will absorb some of the content of this course.

**Commercial Construction I**
Change this course given we are merging the content of the two part series in Commercial Construction into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and proposed textbook are changing.
Green Construct and Sustain I
Change this course given we are merging the content of the two part series in Green Construction and Sustainability into one course. This will change the makeup of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and proposed textbook are changing.

Soils and Foundations
Change prerequisite from BCN 1210c to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Construction Cost Estimating
Change prerequisite from BCN 1251 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Structural Systems
Change prerequisite from BCN 2405 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Construction Documents/Contracts
Change prerequisite from BUL 3130 and BCN4709 to all program prerequisites. We want to ensure that students are not allowed to take upper-level construction classes until all program prerequisites have been completed.

Constr Project Plan/Scheduling
Change prerequisite from BCN 3611c and BCN 3782 to BCN 3782 only. The reason for this is that we've determined BCN 3611c is not needed prior to BCN 4720.

Construction Safety
Expand the contents of this course to further enhance our program by offering “human factors” modules within the safety course. This allows our students to learn techniques that will equip them for managing people specifically involved in construction projects. Including this topic in a safety class is common in other construction management accredited schools. In particular, the course description, outcomes, and the proposed textbook are changing.

Housing and Land Development I
Change this course given we are merging the content of the two part series in Housing and Land Development into one course. This will change the make up of the Construction Electives area and give students more opportunity to select a variety of courses that match their interests and long term goals. In particular, the course description, outcomes, and prerequisites are changing.
Industrial Construction I
Change this course given we are merging the content of the two part series in Industrial
Construction into one course. This will change the makeup of the Construction Electives area
and give students more opportunity to select a variety of courses that match their interests and
long term goals. In particular, the course description, outcomes, and prerequisites are changing.
Change prerequisite to all program prerequisites.

International Construction – New Course Added
Students in this course examine the problems that arise in construction when construction firms
conduct business across national boundaries. They study major issues and practices in
international construction and do an intensive analysis of the process, practice, theory in
international construction and compare construction systems used. The students also analyze the
effect of international construction on firms and the impact that globalization is having on the
construction industry and the environment. The learner will be able to define international
construction and globalization of the construction industry. The learner will be able to identify
major issues in the international construction market, including cultural complexities, economic
factors, global alliances, legal issues, and environmental concerns. The learner will be able to
analyze the effects globalization has on a construction firm.

Construction Finance and Cost Controls– New Course Added
Students in this course examine the financial environment of a contracting company. They study
the financial impact of decisions made at all levels in the contracting firm including comparative
cost analysis. They also analyze the process, practice, and theory of cost controls. Students
compare financial and cost control management techniques and the effect of these practices on
the firm in relation to profit, profit margin, cash flow, bidding, capital equipment, procurement
practices and budgeting.

Construction Equipment– New Course Added
Students in this course explore heavy construction equipment, construction methods, equipment
productivity analysis, equipment selections, and scheduling and administration of heavy civil
projects. Topics of the class will include: fundamental concepts of equipment economics,
planning for earthwork construction, soil and rock, compaction and Stabilization Equipment,
machine equipment power requirements, dozers, scrapers, excavators, trucks and hauling
equipment, finishing equipment and cranes.

As a result of a formal 2008/09 assessment review of the CM curriculum, fourteen changes were
made in course prerequisites. The objective was to minimize registration constraints for CM
students given the increasing enrolment and the limited ability to hire additional CM faculty
given Florida’s economic circumstances. The specific changes made to the curriculum effective
fall 2009 from the assessment process were as follows:

BCN 1210C Construction Materials
The prerequisite to take MAC 1147 Pre-calculus prior to taking BCN 1210C Construction
materials was deleted.
BCN 2405 Introduction to Structures
MAC 1147 Pre-calculus as a prerequisite for BCN 2405 Introduction to Structures was removed. MAC 1147 Pre-calculus is not necessary as a prerequisite for BCN 205 because MAC 1147 is required for Physics I, which is a program prerequisite.

BCN 3762 Building Construction Design & Codes
The prerequisite BCN 1251 Construction Drawing for BCN3762 Building Construction Design & Codes was changed to "all lower level program prerequisites." BCN 1251 Construction Drawing is a prerequisite for all upper level CM courses so it is redundant.

BCN 2280 Surveying: Construction Layout
BCN 4284 Surveying: Construction Layout was changed from an upper 4000 level course to lower-level class. It was concluded that Physics II should not be required to take the Surveying course. Prerequisites were changed from PHY 2054 Algebra Physics II to “none”. The new course number assigned is BCN 2280.

The course description for the catalog was also changed to, “This course provides the student with an introductory knowledge of construction surveying and construction layout, with field and classroom exercises.”

BCN 4753 Construction Administration & Economics
The prerequisites were changed from BCN 4720 Construction Project Planning and Scheduling to "all lower level program prerequisites." Construction Project Planning and Scheduling is not required to understand Construction Administration and Economics.

BCN 4587C Green Construction & Sustainability
The prerequisites were changed from BCN 3611 Construction Cost Estimating and BCN 3223 Soils and Foundations to "all lower level program prerequisites." BCN 3611 and BCN 3223 are not necessary to take before Green Construction and Sustainability.

BCN 4591C Mechanical & Electrical Systems
The prerequisite was changed from PHY 2054 Physics II to "all lower level program prerequisites." PHY 2054 Physics II is not necessary to take prior to taking BCN 4591C.

BCN 4594C Green Construction & Sustainability II
The prerequisite was changed from PHY 2054 Physics II to "all lower level program prerequisites." PHY 2054 Physics II is not necessary to take prior to taking BCN 4594C.

BCN 4730 Construction Safety
The prerequisite was changed from BCN 3762 Building Design and Codes to "all lower level program prerequisites." BCN 3762 is not necessary to take prior to taking Construction Safety.

BCN 4758C Housing & land Development II
Prerequisites PHY 2054 Physics I and BCN 4612 Advanced Construction Cost Estimating were removed.
BNC 4801C Industrial Construction I
The prerequisite PHY 2054 Physics II was removed.

BCN 4802C Industrial Construction II
Prerequisites PHY 2054 Physics I and BCN 4612 Advanced Construction Cost Estimating were removed.

BCN 4872C Heavy Civil Construction II
Prerequisites PHY 2054 Physics I and BCN 4612 Advanced Construction Cost Estimating were removed.

BCN 4873C Commercial Construction II
Prerequisites PHY 2054 Physics I and BCN 4612 Advanced Construction Cost Estimating were removed.

Approved curriculum changes for the previous year, 2007/08 for fall 2008 implementation were as follows:

Remove GEB 1011 Foundations of Business (three semester hours) from the program because the class (GEB 1011) does not meet the needs of the construction management program and the content is covered in BCN 3012 History and Introduction to Construction and BCN 4753 Construction Administration and Economics. This will remove some redundancy as stated in the American Council for Construction Education (ACCE) concerns for the North Florida BCM program. This will reduce the number of credits from six to three to fulfill the foundation section of the BCM program.

Combine BCN 3561 Mechanical Systems (three semester hours) and BCN 4562 Electrical Systems (three semester hours) to make a new course BCN 4XXX Mechanical & Electrical Systems (three semester hours). This will reduce the amount of credits in the Core Requirements section of the program from sixty-four to sixty-one semester hours. This better aligns us with American Council for Construction Education (ACCE) criteria. These changes address redundancy in the BCM program as stated in the 2005 and 2006 ACCE accreditation report.

Move REE 4043 Real Estate Analysis from core requirements to a new business elective section. Students will choose from the following business classes: ACG 2071 Principles Managerial Accounting, MAN 3025, Administrative Management, or REE 4043 Real Estate Analysis.

Allow students to repeat BCN 4944 Construction Management Internship for up to six credits total to satisfy one of the BCN concentration elective classes and the required three-credit internship.

Reduce in the amount of credit hours required for a Building Construction degree from 126 to 120. This was due to the combination of BCN 3561 Mechanical Systems and BCN 4562 Electrical Systems and the removal of GEB 1011 Foundations of Business. We will be meeting American Council for Construction Education (ACCE) standards with 120 hours.
The following classes have had a lab code added to the course number: BCN 4587 GREEN CONST/SUSTAIN, BCN 4751 HOUSING AND LAND DEV, BCN 4870 HEAVY/CIVIL CONST, BCN 4871 COMMERCIAL CONSTRUCT and BCN 3611 CONSTR COST EST.

As planned, in fall 2009 an added requirement for all graduating seniors to take the American Institute of Constructors Associate Constructor (AC) or the Certified Professional Constructor (CPC) exam was implemented. UNF is now a testing site. The exam results will provide an additional measure on the effectiveness of the program in terms of how well the students have mastered the Educational Outcomes from the CM academic program. It also serves as a basis of comparison of the UNF program to other construction management academic programs.

4. Describe program strengths, weaknesses, and opportunities identified in the quality assessment program described above.

Program strengths include program reputation, program innovation such as study abroad, community service and curriculum concentrations, the faculty and students, and relationships with the construction industry.

From the recent assessment cycle, focus areas include the addition of more “hands-on” experience in the program. Also, the current teaching load suggests that another faculty member may be required to support the program. However, enrollment has gone from ~325 to 264 during the fall 2010 term due to the Department “raising the bar” to improve the quality of students admitted to the program. The Department also reduced the number of students in every class to cap the enrollment at 40 (and lower in other classes which involve hands-on work).

Opportunities include the addition of a Distance Learning MS in International Construction Management. It is envisioned that this program will be conducted in concert with a number of other universities located in different countries. Also, the department looks to expand on its research initiatives.

5. State specific plans, including schedule, for overcoming identified weaknesses and incorporating identified opportunities into the program.

Recommended and approved CM program changes from the 2008/09 assessment were implemented in fall 2009. The 2009/10 CM faculty assessment of the program is currently in process. All changes in curriculum have been addressed; some have been implemented and others are in queue for the APC process for implementation in fall 2011.
B. Future Plans

1. Describe the change(s) in goals and outcomes of the construction education program as a result of the program’s quality assessment plan.

Based on the latest survey assessment results there were no changes planned for the Educational Outcomes. The present near term and long term objectives for the Construction Management program are:

**Near Term Objectives**
- Successful 2011 accreditation review by the American Council for Construction Education.
- Continue to hire permanent faculty to meet the teaching load as determined by the university.
- Continue to create Transformational Learning Opportunities for students in such areas as community service, Internship, study abroad, and research.
- Create diversified global opportunities for graduate studies serving our Construction Management graduates.
- Enhance research and scholarly work through development of an Infrastructure Research Center and the development of an eJournal to facilitate the publication of scholarly work.

**Long Term Objectives**
- Initiate space planning for a new CM facility.
- Maintain a viable relationship with the construction industry through the Dean’s Advisory Council, the Department’s Construction Management Advisory Council.
- Continue to meet ACCE accreditation standards.
- Explore new dimensions for the department and academic program such as research, distance learning, and a masters program.
- Initiate an MS International Construction Management program via Distance Learning.
- Become the School of Construction Management

Please refer to the 2009-2010 CM Strategic Plan in Self Study Volume I, Appendix.

2. State specific plans for implementation of program changes emanating from the modifications to goals and outcomes described above.

Based on the annual CM program assessment results, there are no plans to modify the current goals and outcomes. However, there are changes in the program and the curriculum resulting from this year’s assessment is as noted previously in Section IX Program Quality Assessment, Item 3.

C. Actions to Address Prior Cited Weaknesses (For Renewal of Accreditation Studies only)

There were nine weaknesses cited in the March 5–8, 2005 ACCE accreditation review of the Construction Management (CM) academic program at the University of North Florida. At this point in time all ACCE weaknesses have been resolved.

W1. The current Interim Chair is not a qualified construction administrator who is
knowledgeable and committed to the construction profession. (2. Organization and Administration, 2.2. Construction Unit. The construction education unit must be headed by a qualified administrator who is knowledgeable and committed to the construction profession....)

Resolved: Dr. Mag Malek serves as CM Chair. Dr. Malek is an engineer who has been in the construction industry for 15 years, has been teaching 15 years (five of those years at schools of engineering), and has more than ten years in the Construction Management Department. Dr. Malek is also an ACCE Board of Trustees member.

W2. There is not enough faculty for the number of students enrolled, and there are insufficient course offerings to allow students to progress toward degree completion. In addition, the faculty is not adequate to meet the undergraduate course requirement and support the new CM graduate emphasis in the MBA. (4. Faculty and Staff, 4.1. Qualifications. The size of the construction faculty should be commensurate with the number of courses offered, the number of students enrolled, and the other responsibilities of the faculty.)

Resolved - At the time of the ACCE accreditation, there were three fulltime faculty members, an Interim Chair on loan from the Dean’s Office and four adjuncts. Current staffing of the CM program includes six full time faculty members, a full time Instructor/Advisor, four adjuncts and two supporting office staff. Namely,

Faculty
Dr. Mag Malek, PE, Chair and Associate Professor
Dr. John Dryden, Assistant Professor
Dr. Aiyin Jang, Assistant Professor
Dr. J. David Lambert, Associate Professor
Dr. Roberto Soares, Assistant Professor
Mr. James Sorce, Instructor/Advisor
Dr. Carol Woodson, Assistant Professor

Adjuncts
Ms. Tamara Baker
Mr. Michael Shabla
Mr. Floyd Simpson
Mr. Joseph Varon

Office
Mr. Brian Becker, Office Manager
Ms. Marilou Kelemen, Community Relations Coordinator

W3. The adjunct faculty teaching estimating, electrical, and surveying does not possess appropriate academic qualifications and professional experience. (4. Faculty and Staff, 4.1 Qualifications. The educational preparation of each faculty member must include study in the areas for which he has teaching responsibility.)

Resolved – Adjuncts members teach in the area of his/her expertise with appropriate academic qualifications and professional experience. The electrical course has been combined with the
The only academic advising available is provided by a non-construction faculty advisor who accommodates 400+ engineering and CM students. (5. Students, 5.2. Academic Progress. The academic advising and counseling procedures should include a close relationship between the individual student and the construction faculty.)

Resolved – Mr. James Sorce, a full time Instructor/Advisor, was hired for the CM academic program.

W5. The CM program does not track graduates. (5. Students, 5.4. Graduates. There must be communication with alumni and periodic follow-up of graduates.)

Resolved – A new CM newsletter and a new brochure are now routinely published and distributed to the industry and alumni. A new feature has recently been added to the CM website whereby CM alumni can network among themselves via posting contact information (http://projects.ccecc.unf.edu/cm/alumni/index.php). Additionally, a large number of CM Advisory Council members are CM alumni. Feedback includes new topics that should be included in the curriculum, new texts that might be of interest, job openings and other opportunities. Many CM alumni attend the twice yearly Employer Showcase and give feedback on surveys.

W6. Subject Matter Requirements stipulates that the curriculum must have oral presentations, business writing, and ethics integrated within the construction-specific curriculum. Some evidence was produced that demonstrated the inclusion of ethics and oral presentation. Writing assignments were also included in the form of class reports. Business writing, for example, letters, memos, RFI's, change orders, etc., were not found. (3.0. Curriculum: 3.3.2.)

Resolved - Expanded emphasis on oral presentations, business writing, and ethics have been included throughout the curriculum. Formal business writing has also been expanded including formal Construction Specification Institute (CSI) based construction estimates, transmittal letters, memos, etc.

W7. The standard requires 1 semester hour (15 instructional hours) of ethics. There is one General Elective course that may fulfill this requirement; however, there is no guarantee that all students will take this specific course. (3.3.2.1)

Resolved – Ethics topics have been incorporated throughout the CM curriculum. This is in addition to the General Education elective. For example, BCN 4944 Construction Management Internship includes an ethics module.

W8. No evidence was found for Computer Applications for Project Management and Comparative Cost Analysis under Construction Methods and Materials. (Under 3.3.3 Required
Fundamental Construction Topics)

Resolved – Per assessment surveys with the local construction industry, popular computer application programs include:

- Scheduling: P3 (2), P6, Project (3), Sure Trac (1)
- Project Management: Build Soft (0), Prolog (1), Expedition (1)
- Cost Estimating: Excel (4), Build Soft (0), Timberline (1)
- Drawing: AutoCAD (2)
- Site Analysis: BLD2WIN (0), HardDollar (0)
- Office: MS Office Suite (3)

CM faculty members have integrated computer applications for project management, Primavera P3 and P6, MS Excel and MS Office, into the curriculum. The Materials and Superstructure (Systems and Methods) courses have initiated comparative analysis modules such as the impact of the materials and system selection on the project.

W9. The outcome assessment program is subjective in nature. It does not have an objective learning outcome assessment vehicle to determine student learning and knowledge retained (i.e., student achievement testing). The process is to generate a data profile to be used in such a manner to foster student achievement in respect to the construction education program. (Program Quality and Outcome Assessment, 9.3, Application.)

Resolved – Per the requirements of the State of Florida, the CM academic program publishes an Academic Learning Compact (ALC) for students. The ALC specifies the Educational Outcomes a student can expect from the CM academic program. As part of the continuous assessment and improvement program, the Educational Outcomes are periodically assessed by different communities such as employers and alumni. For example, the Employers of the CM student Interns evaluate the job performance of the students per the Educational Outcomes. In addition to self-assessment instruments, CM students are strongly encouraged to take various professional exams such as the Florida General Contractor’s exam and the American Institute of Constructors (AIC) Constructor Qualification Examination Level 1 (CQE1).

CM has taken action to have UNF as an official testing site for the AIC. Beginning in the Fall 2009 semester the AIC CQE1 exam is now required in BCN 4709 Construction Project Management Capstone course. This exam accounts for 20% of the course grade. This provides the CM department with another direct measure for assessment purposes.

For programs seeking renewal of accreditation, state any actions taken to address program weaknesses cited in the previous Visiting Team report.

At this time, there are no outstanding weaknesses for the UNF CM academic program. Actions taken by UNF to resolve the weaknesses are reported in the previous section.
D. Public Accountability

Indicate how the institution publishes the objectives of the program, admission requirements, program assessment measures employed and the information obtained through these assessment measures, student achievement, the rate and types of employment of graduates, and any data supporting the qualitative claims made by the program.

UNF has eliminated paper catalogs. The Internet is now employed exclusively by the university to disseminate information to the public. CM WEB publications include:

- CM Department Overview
- CM Academic Learning Compact
- General Education Requirements
- CM Upper Division Program of Study Requirements
- CM Annual Report
- CM Annual Scholarship Report
- UNF Fact Book
- CM Newsletters
The Department of Construction Management mission, values, program goals and educational outcomes are published in the WEB based UNF catalog at:

http://www.unf.edu/catalog/catalog.aspX?lmenu=495&ban2=13387&id=12841
The Construction Management program publishes to the public the expectation of the skills and capabilities a CM student will have upon graduation, the Academic Learning Compact. The Academic Learning Compact also describes the methods and techniques by which the CM program assesses how well the students perform versus the Educational Outcomes:


UNF Academic Learning Compacts

BUILDING CONSTRUCTION

Mission Statement

To educate and develop construction professionals through rigorous, relevant, accredited degree programs offered by faculty devoted to teaching, scholarly activities, services and community involvement. Values 1. We believe that excellence in teaching, research, community service projects, and an active working relationship with our industry is essential to the development of successful construction professionals. 2. We believe that cultural awareness and a global perspective, achieved through study abroad is critical to the complete education of construction professionals. 3. We believe that effective construction education: a. Requires interaction between faculty, students, and industry inside and outside the classroom. b. Provides opportunities for transformational learning activities, such as internships, service learning, and robust engagement with our industry. c. Emphasizes career development and placement opportunities.

Student Learning Outcomes

UNF Building Construction graduates will be able to:

Communication Skills

1. Communicate effectively and conduct oral presentations. 2. Write succinctly and generate professional reports. 3. Use discipline oriented software to communicate with subcontractors, vendors and other entities.

Content Discipline Knowledge/Skills
There are a total of 120 semester credit hours required to obtain the BS in Building Construction. The first 60 semester credit hours, Lower Division, is termed General Education. The requirements for General Education are specified by the State of Florida. These requirements are found in the UNF WEB based catalog at:

http://www.unf.edu/catalog/catalog.aspX?lmenu=489&ban2=13399&right=14489&id=12111
The Construction Management *Upper Division Program of Study requirements* are published on the UNF website at: [http://www.unf.edu/catalog/programs.aspx?id=15032407464](http://www.unf.edu/catalog/programs.aspx?id=15032407464)

---

**Major: Building Construction**

**Degree: Bachelor of Science**

**Informational Text**

Bachelor of Science in Building Construction (120 credit hours, w/ min 90 upper level hrs)

- All course work must be completed with a grade of "C" or better, unless otherwise noted.
- Once enrolled at UNF, any remaining prerequisites for the major or minor must be completed at UNF.

**Prerequisites**

Building Construction Prerequisites: (12 requirements - 39.6 semester hours/F97-...)

- MAC2233 3 QM-Calculus for Business
- STA2023 3 Elem Statistics (Business)
- BCHN1201 3 Construction Drawing
- BCNW1200 3 Construction Materials
- BCNW1205 3 Introduction to Structures
- CGS1100 3 Computer Applications for Busi
- CSE2231 or 1576 are acceptable alternatives to CGS1190.
- Any course covering the appropriate software may be approved for this requirement if approved by an advisor.
- ECC2013 3 Principles of Microeconomics
- ROC2023 3 Principles of Macroeconomics
- ROC2021 3 Principles of Financial Accounting
The *program assessment measures* utilized in the Construction Management program are:

**Instructional Satisfaction Questionnaire (ISQ)**
A formal student assessment of the instructor and the course is conducted each semester for each course. Two categories, the course and the instructor, are evaluated by the students with approximately 15-20 survey questions per category. The key question, “Overall, how would you rate the instructor”, is viewed as a fundamental question on how successful the course was. The rating scale is from 0 to 5 with 5 being the best. An ISQ score of 4 or better on the overall instructor performance is viewed to be a quite good course. In addition, the students have an opportunity to add written comments. The ISQ course results are reviewed by the individual faculty member and his/her management team.

**Graduating Senior Survey**
Each semester graduating seniors are asked to evaluate the CM program on various aspects of the academic program including advising, facilities, support programs, curriculum, educational outcomes, and opinions on UNF and the CM program.

**Industry Survey**
Professional members of the regional construction companies are solicited for their feedback and views on the academic program. This is typically done twice per year. Areas surveyed include educational outcomes, UNF CM student job performance versus CM employees from other schools, their views on the quality and depth of the UNF CM program, CM program strengths and weaknesses, construction software deployed in their firms and any changes recommended for the UNF CM program.

**Internship Evaluations**
Each student must participate in an Internship as part of his/her academic program. The employer is asked to evaluate the student’s job performance versus the Expected Educational Outcomes of the CM program. Thus, the Department has a direct measure on how well trained the students are in terms of the academic program’s desired Expected Educational Outcomes. Construction firms are also solicited on any CM program changes they would recommend.

**Informal Student Feedback - Student Advising**
There is a full time CM advisor, Mr. James Sorce, Instructor/Advisor. Mr. Sorce is active in securing student feedback through the graduating senior surveys and is an active participant in CM Departmental discussions. Mr. Sorce serves as the focal point in the Department in preparing and processing curriculum change requests each fall.

**Informal Student Feedback - Open Door Policy**
The CM faculty, the Chair and the Dean have an open door policy. Students are welcome in at any time to discuss any topic. These conversations are factored into the CM faculty deliberations on the program. The Chair on occasion also attends student club meetings and visits the classroom.
Informal Industry Feedback – Dean’s Industrial Advisory Committee
The Dean has an Industrial Advisory Council for the college. Members of this committee include a number of senior executives from the regional construction companies. Feedback from the Dean is shared with the CM faculty.

Informal Industry Feedback – Faculty Interaction
The CM faculty members receive feedback from industry through various forums such as the Employment Showcase (job fair), yearend Hardhat Banquet, scholarship lunches with industry and community service project sponsors.

Alumni Feedback
The CM Department initiated an online alumni-networking module on the departmental web site. This will be used in the future as a source of alumni email ids for survey purposes. Today, the university and the department do not have a viable database for survey purposes. However, there is a fair amount of informal feedback to the CM from students working in the industry. Feedback includes new topics that should be included in the curriculum, new texts that might be of interests, job openings and other opportunities.

Other UNF Assessment Instruments
The University has a number of other assessment instruments used throughout the academic year including faculty annual evaluations, evaluation of administrators by the faculty and an annual program report to the Provost.

The CM Chair provides CM status and assessment information to the CM Industry Advisory Committee.

The CM Department does not formally track the rate and type of employment of graduates. In normal times, almost all CM students have a permanent position before or at graduation. Most students find employment through the Internship program. The Department does have an indirect measure of employment status through the Graduating Senior Surveys. Survey results show that in recent times only about ~30% of graduating seniors have a permanent position. This is due to the current economic circumstance of America.
All academic units publish an annual report. Academic Affairs post these annual reports to the university web site. For example, one can go to the web site, select 2005-2006, scroll down to Construction Management for that period annual report. In recent times, the department annual report is now directly submitted via software to the Provost Office. 

All academic programs also submit an annual Scholarship Report to the Provost. This report is also posted to the university web site, for example:

http://www.unf.edu/acadaffairs/provost/Scholarship_Reports.aspx
UNF Institutional Research (IR) publishes a Fact Book showing the characteristics of the university in areas of students, faculty, personnel and finance. IR will provide various reports, if requested, on items such as retention rates and ethnic distribution. [http://www.unf.edu/dept/inst-research/Factbook_2008-2009/Pocket_Fact_Book_2009.pdf](http://www.unf.edu/dept/inst-research/Factbook_2008-2009/Pocket_Fact_Book_2009.pdf)
The CM department also reports faculty and student achievements to the public via a periodic newsletter which is posted on the CM website [http://www.unf.edu/ccec/bcm/newsletters/](http://www.unf.edu/ccec/bcm/newsletters/) and is disseminated to industry electronically. For example, the following excerpt from the Spring 2009 Newsletter notes that the UNF CM NAHB student design competition team finished in the upper third of forty competitors:

**STUDENT COMPETITION** – The National Association of Home Builders (NAHB) Construction Management Team placed in the top third out of 40 teams in the National Residential Competition at the International Builder's Show in Las Vegas, January 2009. The team developed a management proposal including an estimate, schedule, cash-flow forecast, and a marketing plan for a real project, the Villas at Silverado Hills in San Antonio, TX, a Centex development. Congratulations to team leader Ryan Parker, and the entire team (in photo above), Construction Management Students David Auld, Benjamin Cashen, Vincent Gazzo, Jeffrey Hoelzer, and Geoffrey Tucker. Mr. James Sorce served as the Construction Management Department team advisor.

Additional CM Department Newsletters are included in Self Study, Volume I, Appendix.
E. Program Quality

Define the academic quality assurance plan, how it relates to the program mission statement, goals, and measurable objectives. Identify the quality indicators used by the program.

The Construction Management mission and goals are presented in Section I C., Construction Unit. The measurable objectives or outcomes are reported in the Academic Learning Compact, namely...

CM Student Learning Outcomes:

Communication Skills
1. Communicate effectively and conduct oral presentations. 2. Write succinctly and generate professional reports. 3. Use discipline oriented software to communicate with subcontractors, vendors and other entities.

Content Discipline Knowledge/Skills
1. Be computer literate and internet-capable. 2. Understand and solve construction problems. 3. Know and uphold ethical standards of the field. 4. Have the ability to work and communicate with all types of people. 5. Be prepared for successful entry into the construction industry. 6. Have the ability to lead in the construction industry and in the community. 7. Have the ability to make sound economic decisions.

Critical Thinking Skills
1. Demonstrate the ability to think and reason logically.

The quality assurance plan has been previously reported in detail in Section II Organization and Administration, 2.0 Construction Unit, e. Evaluation of Program Effectiveness.

Quality Assurance Plan Overview:

As part of the continuous assessment and improvement program, the Construction Management Educational Outcomes are periodically assessed by different communities such as employers and industry. For example, the Employers of the CM Student Interns evaluate the job performance of the students per the Educational Outcomes. In addition to self-assessment instruments, CM students are strongly encouraged to take various professional exams such as the Florida General Contractor’s exam and the American Institute of Constructors (AIC) Constructor Qualification Examination (CPC) exam. The CM Department rotates new faculty through the ACCE Visitor Team training sessions. This training provides a basis of understanding of the requirements to have a premiere construction academic program. A multiplicity of formal and informal methods and techniques are employed to generate feedback and recommendations on the UNF CM academic program. The methods and techniques used in the CM Academic Quality Assessment include the Instructional Satisfaction Questionnaire (ISQ), a formal student assessment of the instructor and the course is conducted each semester for every course. Graduating Senior Survey Feedback is solicited from graduating seniors each semester on various aspects of the academic program such as advising, curriculum, student clubs and facilities. Industry Survey Professional members of the regional construction companies are solicited for their feedback and views on the
academic program. This is typically done twice per year. The course surveys and the views of industry and the graduating seniors are key inputs to the CM continuous assessment and improvement process. In addition, each student must participate in an Internship as part of his/her academic program. The employer is asked to evaluate the student’s job performance. The evaluation parameters include the Expected Educational Outcomes for the CM program. Thus, the Department has a direct measure by industry on the students’ performance in terms of the academic program’s desired Expected Educational Outcomes. Industry feedback is also obtained through the Dean’s Advisory Committee and the Chair’s Industry Advisory committee.

CM quality indicators have been highlighted in Section IX General Analysis D. Public Accountability for the various survey instruments. Detail survey information is also shown in Volume II Self Evaluation, C. Example Assessment Surveys.
Graduating Senior Survey 2009/2010 Academic Year Results - Facilities

Section IX
### 2009-2010 Academic Year Graduation Survey Results-Curriculum

<table>
<thead>
<tr>
<th>Course</th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Did Not Participate</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN 4990 Study Abroad</td>
<td>15</td>
<td>13</td>
<td>15</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4944 CM Internship</td>
<td>27</td>
<td>17</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>BCN 4931 Independent Study</td>
<td>11</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4873C Commercial Construction II</td>
<td>10</td>
<td>12</td>
<td>23</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4872C Heavy Civil Construction II</td>
<td>19</td>
<td>18</td>
<td>23</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4871C Commercial Construction I</td>
<td>16</td>
<td>14</td>
<td>30</td>
<td>15</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>BCN 4870C Heavy Civil Construction I</td>
<td>5</td>
<td>7</td>
<td>27</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4722 Construction Administration &amp;...</td>
<td>21</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4758 Housing and Land Development II</td>
<td>20</td>
<td>25</td>
<td>28</td>
<td>11</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>BCN 4752 Site Analysis &amp; Development</td>
<td>22</td>
<td>20</td>
<td>26</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4571C Housing &amp; Land Development I</td>
<td>30</td>
<td>21</td>
<td>28</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCN 4730 Construction Safety</td>
<td>15</td>
<td>40</td>
<td></td>
<td>15</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>BCN 4720 Construction Scheduling</td>
<td>15</td>
<td>31</td>
<td></td>
<td>20</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>BCN 4709 CM Capstone Projects</td>
<td>20</td>
<td>22</td>
<td>17</td>
<td>23</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>BCN 4708 Documents and Contracts</td>
<td>20</td>
<td>43</td>
<td></td>
<td>11</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>BCN 4612 Advanced Cost Estimating</td>
<td>8</td>
<td>16</td>
<td>23</td>
<td>32</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>BCN 4594C Green Construction &amp; Sustainability I</td>
<td>11</td>
<td>21</td>
<td>7</td>
<td>4</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>BCN 4591C Mechanical &amp; Electrical Systems</td>
<td>21</td>
<td>40</td>
<td></td>
<td>12</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>BCN 4587C Green Construction &amp; Sustainability I</td>
<td>20</td>
<td>11</td>
<td>8</td>
<td>13</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>BCN 4475 Structural Systems</td>
<td>15</td>
<td>55</td>
<td></td>
<td>18</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>BCN 3782 Intro to Construction Computing</td>
<td>7</td>
<td>19</td>
<td>26</td>
<td>20</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>BCN 3762 Design &amp; Codes</td>
<td>9</td>
<td>28</td>
<td>15</td>
<td>11</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>BCN 3611C Cost Estimating</td>
<td>8</td>
<td>18</td>
<td>24</td>
<td>27</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>BCN 3224 Superstructures</td>
<td>25</td>
<td>30</td>
<td></td>
<td>15</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>BCN 3223 Soils and Foundations</td>
<td>29</td>
<td>42</td>
<td></td>
<td>10</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>BCN 3012 History of Construction</td>
<td>11</td>
<td>32</td>
<td>23</td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>BCN 2405 Intro to Structures</td>
<td>19</td>
<td>31</td>
<td>13</td>
<td>22</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>BCN 2280/4284 Survey and Construction Layout</td>
<td>13</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>BCN 1252 Construction Drawing</td>
<td>8</td>
<td>17</td>
<td>20</td>
<td>15</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>BCN 1210L Construction Materials Lab</td>
<td>9</td>
<td>19</td>
<td>18</td>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>BCN 1210 Construction Materials</td>
<td>5</td>
<td>23</td>
<td>20</td>
<td>9</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>
2009-2010 Academic Year Industry Survey Results

Educational Outcomes

- Work with People
- Think/Reason
- Understand/Describe
- Sound economic decisions
- Communication
- Computer Literacy
- Ethical
- Prepared
- Ability to Lead
- Overall Evaluation

- Excellent
- More than Satisfactory
- Satisfactory
- Needs to Improve
- Unsatisfactory
- N/A
Number of Schools Industry Survey Participants Recruit From

- Less than 5
- 6-10
- 11-15
- Greater than 15

Performance of UNF Grads Compared to Others

Industry Survey Participant Rankings of UNF Grads Compared to Others

- Comprehensiveness of the Technical Content compared to others
- Quality of Technical Content of CM Curriculum compared to others
- Rank of UNF CM Graduates in your pool:

Better | About the same | Not as well

- Bottom 25%
- Middle 50%
- Top 25%