TEXAS STATE UNIVERSITY
SAN MARCOS
The rising STAR of Texas

Department of Engineering Technology

Self-Evaluation Study: Volume I

July 2012

Prepared for:

American Council for Construction Education

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DOCUMENT 102

MANUAL FOR PREPARATION OF THE SELF-EVALUATION STUDY

Submitted by:

Name of Institution: Texas State University-San Marcos

Title of Construction Program: Construction Science and Management

I. INTRODUCTION

A. Accreditation

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

   Texas State University-San Marcos is accredited by the Southern Association of Colleges and Schools (SACS)

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

   Yes __ No XX

   If yes, describe: N/A

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

   AACSB International-The Association to Advance Collegiate Schools of Business
   Accreditation Board for Engineering & Technology/Computing Accreditation Commission, Inc.
   Accrediting Council on Education in Journalism and Mass Communications
   American Bar Association
   American Council for Construction Education
   Association of University Programs in Health Administration
   Commission on Accreditation for Dietetic Education
   Commission on Accreditation for Health Informatics and Information Management Education
   Commission on Accreditation in Physical Therapy Education
   Commission on Accreditation of Allied Health Education Programs
   Commission on Accreditation of Athletic Training Education
   Commission on Accreditation of Healthcare Management Education
   Commission on Accreditation for Respiratory Care
   Council for Accreditation of Counseling and Related Educational Programs
   Council for Interior Design Accreditation
   Council on Academic Accreditation in Audiology and Speech-Language Pathology
   Council on Social Work Education

Joint Review Committee on Education in Radiologic Technology
Foundry Education Foundation
National Accrediting Agency for Clinical Laboratory Sciences
National Association for the Education of Young Children/National Academy of Early Childhood Programs
National Association of School Psychologists
National Association of Schools of Music
National Association of Schools of Public Affairs and Administration
National Recreation and Park Association
Southern Association of Colleges and Schools
Texas State Board for Educator Certification/Texas Education Agency

B. **Institution**

Provide background information about the institution. Describe its history, mission, size, purpose, and organizational structure in general terms. (If this information is available elsewhere, it may be included by reference.)

1. History: Authorized by the Texas Legislature in 1899, Southwest Texas State Normal School opened its doors in 1903. Over the years, the Legislature broadened the institution's scope and changed its name, in succession, to Normal College, Teachers College, College, and in 1969, University. Each name change reflects the university's growth from a small teacher preparation institution to a major multi-purpose university. In 2003, the Legislature renamed the school Texas State University-San Marcos.

   Texas State's original mission was to prepare Texas public school teachers, especially those of the south central area. It became renowned for carrying out this mission, but today it does far more. Texas State University-San Marcos currently offers programs in the College of Applied Arts, McCoy College of Business Administration, College of Education, College of Fine Arts and Communication, College of Health Professions, College of Liberal Arts, College of Science and Engineering, and University College. The University College also oversees the undergraduate general education core curriculum and undergraduate advising as well as the freshman year experience. The Graduate College provides opportunities for continued intellectual growth through advanced and specialized education that develops leaders in the professions and in research.

   As Texas State University-San Marcos' student population has grown—from 303 in 1903 to 34,097 in 2011—the campus, too, has expanded and today Texas State University-San Marcos is the sixth largest university in the state. Overlooking the campus and serving as a landmark since 1903 is Old Main, a red-gabled Victorian building restored to its original grandeur.

   In 1979, after adding a number of classroom buildings and residence halls, Texas State University-San Marcos purchased the former San Marcos Baptist Academy adjacent to the original campus. In 1981, South Texas entrepreneur Harry M. Freeman donated a 3,500-acre ranch to Texas State University-San Marcos to be held in perpetual trust as the Harold M. Freeman Educational Foundation. The working ranch is used as a laboratory for students in agriculture, animal science, biology and a variety of other academic disciplines. In 1990, the university

opened the Albert B. Alkek Library. The building, conveniently located in the center of campus, is named for the noted Texas rancher, oil man and educational philanthropist who died in 1995.

Texas State University-San Marcos acquired one of the most unique ecosystems in the world in 1994 when it purchased the former Aquarena Springs resort and theme park. The purchase allowed Texas State University-San Marcos to serve as steward of the headwaters of the San Marcos River, preserving and protecting the area for future generations of Texans. Now called the Aquarena Center, the 90-acre property is home to the Office of Continuing Education and is the site of a wide variety of educational and research pursuits. Aquarena Center is home to several endangered species of plants and animals that exist nowhere else in the world.

In 1998, Texas State University-San Marcos joined forces with other area universities to establish the Round Rock Higher Education Center. The RRHEC combines the efforts of Texas State University-San Marcos, Austin Community College, and Temple College at Taylor to offer educational opportunities in the North Austin area.

Texas State University-San Marcos is located in San Marcos, a Hill Country community about halfway between Austin and San Antonio. Its location on the banks of the San Marcos River provides recreational and leisure activities for students throughout the year.

Texas State University-San Marcos became part of The Texas State University System in 1911. That System is governed by a nine-member Board of Regents. Other components in the System include Lamar University-Beaumont, Lamar University Institute of Technology, Lamar College-Orange, Lamar College-Port Arthur, Sam Houston State University and Sul Ross State University.

2. Mission Statement: Texas State University-San Marcos is a public, student-centered, doctoral-granting institution dedicated to excellence in serving the educational needs of the diverse population of Texas and the world beyond.

3. Size: Texas State University-San Marcos consists of two campuses. The main campus, which is located in San Marcos, Texas, was established in 1899 and currently has an enrollment of about 34,000 students. Of these students, about 29,500 are undergraduates and about 4,500 are Masters and Ph.D. students. The Construction Science and Management program is located in the Mitte Building on the San Marcos campus.

   In order to serve the needs of North Austin and Williamson County, Texas State University, along with two other universities, formed a coalition to establish and staff the Round Rock Higher Education Center (RRHEC), which was founded in 1998. Currently, there are about 530 undergraduate students enrolled in junior and senior level classes offered from nine different majors including the new BS in nursing degree. In addition, there are about 600 graduate students at the center.

4. Purpose (Students' Rights, Privileges and Expectations): Texas State University-San Marcos believes that the primary purpose of higher education is to promote learning and stimulate inquiry for truth in an atmosphere of freedom. Texas State University-San Marcos is committed to the value of a racial and ethnic diversity. Accordingly, Texas State University-San Marcos encourages students to exercise the rights of citizenship. However, these rights are subject to reasonable limitations necessary for the orderly operation of Texas State University-San Marcos. Texas State University-San Marcos expects students to accept their responsibilities as citizens and members of a scholarly community. Paramount among these responsibilities is respect for the rights of others, academic and personal integrity, and adherence to federal, state, and local law as well as university regulations.

   The faculty and administration are genuinely concerned with the physical and ethical welfare of students. To that end, Texas State University-San Marcos has established rules of conduct and has published these in a Code of Student Conduct. These regulations guide students in achieving personal and academic goals and help the university function in an orderly way. Since students voluntarily associate themselves with Texas State University-San Marcos, they should know that these rules are honestly and faithfully enforced. The rules include clear prohibitions against sexual or racial harassment.

   The administration and faculty encourage students to participate in managing Texas State University-San Marcos through its system of advisory councils and committees. Students are invited to serve as voting members of many of these groups, and are expected to contribute actively to their success. Students may submit recommendations for changes in policy, not only through the committee structure, but also through their own student government.

5. General Organizational Structure: The academic side of the university is divided into colleges, schools and departments. Departmental Chairs and School Directors report to an academic Dean, who in turn reports to the Provost/Vice President for Academic Affairs (VPAA). The Provost/VPAA reports to the University President.

C. **Construction Unit**

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

Origin/History: The Construction Program had its beginnings in 1984 when the Department of Industrial Arts changed its name to the Department of Technology. Along with the name change came considerable reworking of all of its programs. As a consequence, the Bachelor of Science in Technology degree with a major in Industrial Technology-Construction Technology emerged. Through the years, this degree has gone through several modifications to bring it into alignment with the American Council for Construction Education (ACCE) accreditation requirements. These changes included major curriculum changes to the program, hiring credentialed faculty and staff as the opportunities became available, and

relocation into the R.F. Mitte Building, a new state-of-the-art facility in the Fall of 2003.

In the Fall of 2007, the department changed its name to the Department of Engineering Technology and in the Spring of 2008, the Bachelor of Science in Concrete Industry Management (CIM) was introduced. This is only the fifth such program in the nation and with this new major came three new faculty, all with Civil Engineering degrees and over $500,000 of construction laboratory improvements and new equipment purchases. The CIM majors take several courses from the Construction Science and Management (CSM) program and their faculty also teach several CSM courses. The members of both the CSM and CIM programs work closely together to benefit the construction industry.

The quest to become ACCE accredited began in earnest after the Construction Program Coordinator, Dr. Gary Winek, returned from his Spring 2003 Faculty Development Leave to Colorado State's (Fort Collins) Construction Management Program. This program was one of the largest Construction Management Programs in the country with a stellar reputation. During his visit, he became familiar with the ACCE requirements for accreditation, along with receiving training to become an ACCE program evaluator. Since then, he has been on visiting teams to Eastern Kentucky State University (2004) and Missouri State University (2010).

Then, in the Fall of 2003, Mr. Mike Holland, Executive Vice President of ACCE, met the Construction faculty at Texas State University-San Marcos and together they carefully looked at the existing curriculum in light of the ACCE Accreditation Standards. As a result of this meeting, a "Construction Team" was formed of faculty primarily teaching in the construction area and a process of curriculum revisions was initiated. In 2006, a Construction Advisory Board (CAB) was formed and this CAB has provided direction and guidance to our program since that date. The first construction job fair was initiated in Fall 2006. During the Fall of 2010, we included the Concrete Industry in this event and the name was changed to the Construction and Concrete Industry Job Fair. In Spring of 2006 we entered ACCE Candidate Status, and in December 2009, our preliminary self evaluation was accepted by ACCE.

We submitted our "Final Self-Evaluation Study" in May of 2010. Based on the reviewers' comments and input from the faculty and interim chair, it was decided to tentatively move our site visit to the Fall of 2012. This meant that our five year Candidate Status would expire in July of 2011. We were advised by the national office to withdraw from Candidate Status and immediately reapply. We completed this process and re-entered Candidate Status in August of 2011.

Mission Statement: The mission of the Construction Science and Management program is to achieve a nationally recognized, student-centered, industry-oriented, construction program that prepares graduates to become outstanding future leaders, well versed in relevant management practices, current construction techniques and in the conduct of applied research.

The mission of Texas State University's Construction Science and Management program will be accomplished through the following goals and objectives:

2008 – 2012 Construction Program Strategic Plan

Goal 1: To prepare students for careers in the Texas construction industry and beyond.

- Objective 1: Student will demonstrate technical knowledge and skills acquired through the study of the construction discipline.
- Objective 2: Students will demonstrate an understanding of construction processes.
- Objective 3: Students will demonstrate effective communication skills through the successful execution of both graphic communication and written papers.
- Objective 4: Students will recognize and apply high professional practices and ethical standards.
- Objective 5: Students will demonstrate strong leadership, management and teamwork skills.
- Objective 6: Students will apply modern technology to solve construction related problems.
- Objective 7: Students will recognize the need for engagement in lifelong learning.

Goal 2: To attract, recruit and retain outstanding faculty.

- Objective 1: Provide faculty development opportunities.
- Objective 2: Reward meritorious faculty performance when funds are available.
- Objective 3: Provide appropriate start-up funds.

Goal 3: To maintain quality learning and research facilities.

- Objective 1: Improve and update learning resources in the classroom and laboratory.
- Objective 2: Improve research instrumentation capabilities and provide sound technical support.

Goal 4: To maintain partnership with the industry and community.

- Objective 1: Continue to host the Fall and Spring "Construction and Concrete Industry Job Fairs".
- Objective 2: Invite guest speakers from the industry to present to classes and professional societies.
- Objective 3: Maintain an active Construction Advisory Board.
- Objective 4: Provide students for construction internships.

Goal 5: To maintain ACCE Accreditation.

Objective 1: Seek input from the various stakeholders of the program on a continual basis.
Objective 2: Continually analyze information from Objective 1 above to identify opportunities for improvement.
Objective 3: Continually develop and implement plans of improvement.

Note: Please see Appendix S for the 2012-2017 Strategic Plan

Current Size: The Construction Program has nearly doubled in size from 136 majors in the Spring of 2003 to 216 majors during the Fall of 2011 (see chart in Section V, C.). Because of this 62% increase in Construction majors, a Pre-Construction curriculum was incorporated into the Construction program beginning with the 2011/2012 academic school year. This pre-construction curriculum requires all students to complete certain prescribed courses in Math, Science and Technology while maintaining a 2.5 GPA in these prescribed 30 hours. It is hoped that the Pre-Construction curriculum requirement will facilitate more effective management of the balance between quality and quantity of construction majors. Please see Section II for a chart and description of the organizational structure of the construction unit.

2. List near and long-term objectives in relation to how it is intended that program goals will be achieved and how progress or achievement will be measured.

Near term objectives (1-2 years) for the construction program include:

1. Prepare Final Self-Evaluation Study and gain ACCE Accreditation with a site visit during the 2012/2013 academic year.
2. Implement the new construction curriculum.
3. Implement the Pre-Construction curriculum.
4. Mentor Dr. Kimberly Talley, our new CSM hire, who joined the faculty during the Spring 2012 semester.

Long term objectives (5-8 years) for the construction program include:

1. Obtaining and maintaining ACCE accreditation.
2. Establish an endowed faculty position.
3. Develop and retain outstanding faculty.
4. Establish “professional” faculty position(s) in order to better recruit faculty having significant industry experience.
5. Increase level of external funding for construction research.
6. Increase the quantity of peer reviewed research papers published by construction faculty.
7. Develop a strong graduate level construction concentration.

Our success will be measured through:

1. Learning outcomes assessment process
2. Annual faculty evaluations
3. Feedback from Alumni Survey Results (Graduating Seniors)
4. Feedback from alumni surveys
5. Feedback from teaching evaluations
6. Feedback from the Construction Advisory Board
7. Feedback from Internship Industrial Supervisor's (TECH 4390)
8. Feedback from Intern (TECH 4390)
9. Feedback from Employers

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.

See *Chart 1* for the university wide organizational chart. This chart traces the administrative structure from the level of the President to the college level. The construction program resides within the Department of Engineering Technology. The Department of Engineering Technology resides in the College of Science and Engineering.

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

See *Chart 2* for the organizational chart of the Department of Engineering Technology. The construction program coordinator, Dr. Gary Winek, reports to the chair of the Department of Engineering Technology, Dr. Andy Batey. Other program coordinators within the department such as those for the Engineering Technology, Industrial Technology and the Concrete Industry Management (CIM) programs report at the same level. Program administration is a shared responsibility of the program coordinators and the chair.

Chart 1. University Organizational Chart

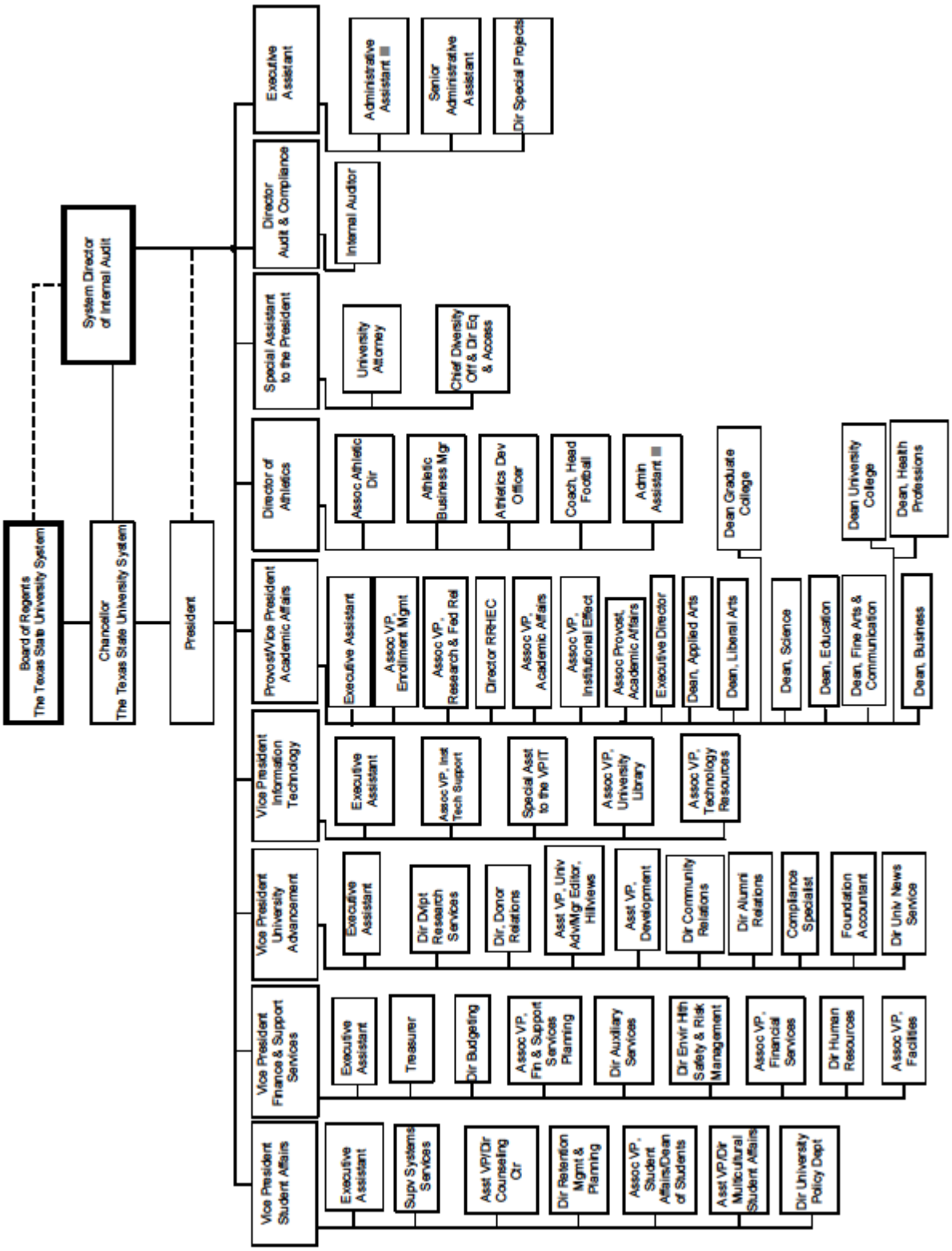
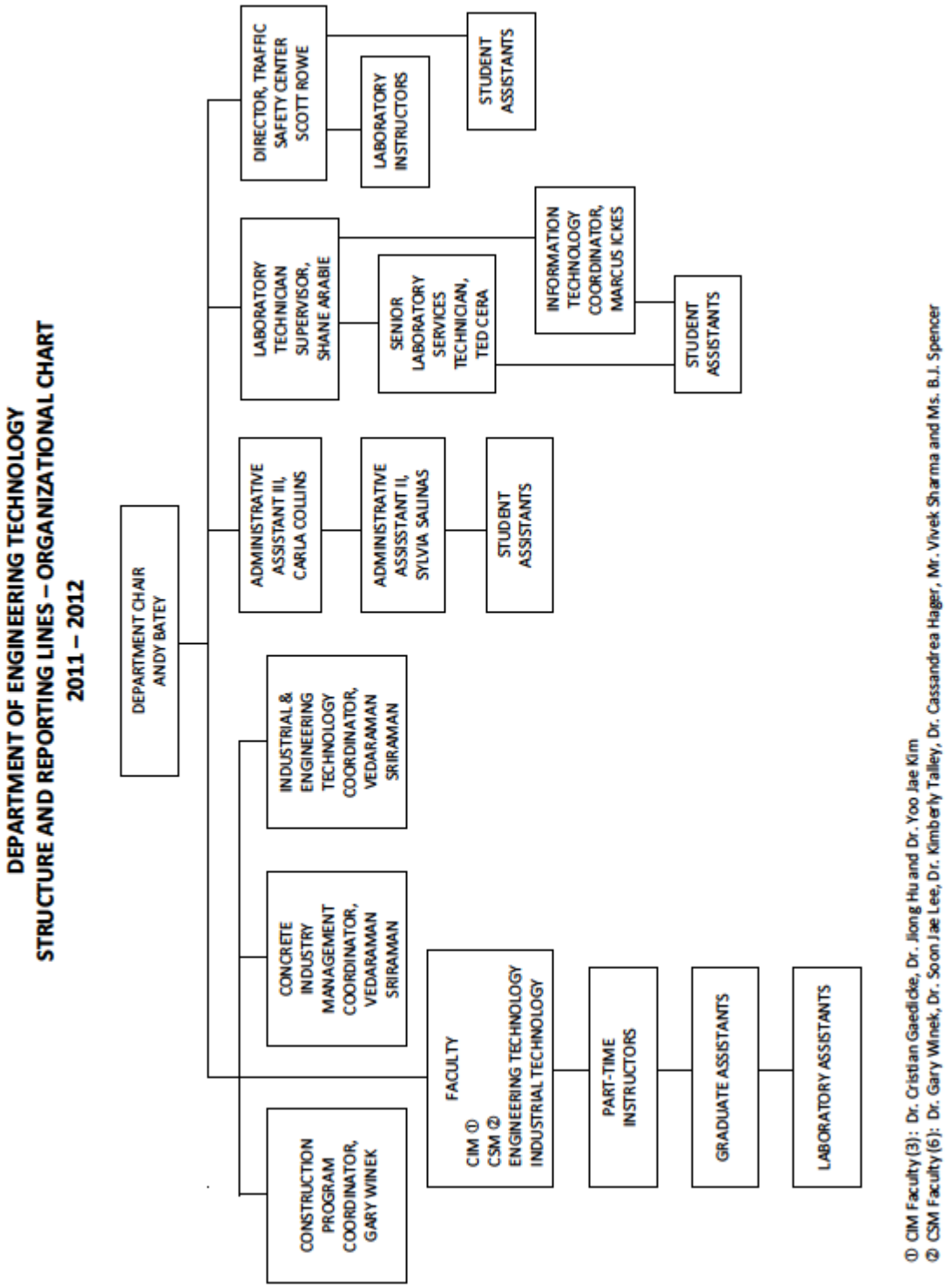
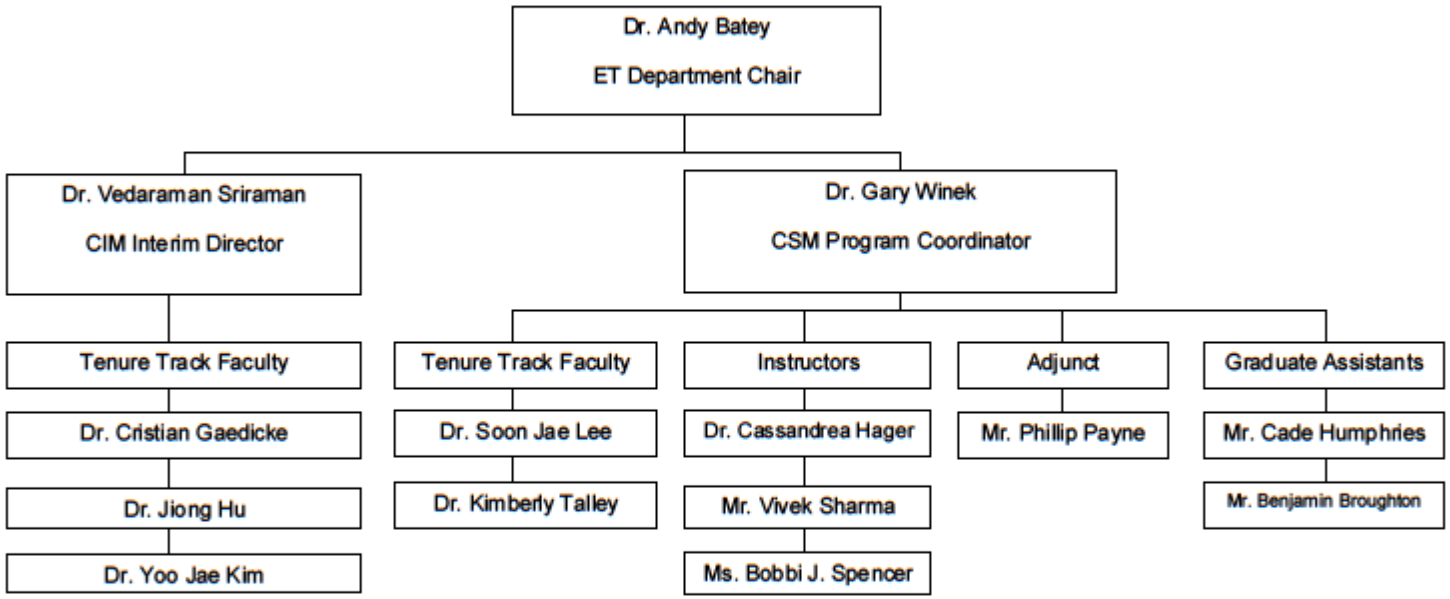


Chart 2. Department of Engineering Technology Organizational Chart



CSM/CIM Organizational Chart

2011/2012



B. Construction Unit Administration

1. Administrator of the construction unit:

Name of Incumbent: Dr. Gary Winek

Title: Professor and Construction Program Coordinator

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 construction program coordinator and the program faculty develop, implement and continually revise the curriculum objectives based on input from various stakeholders who include the Construction Advisory Board (CAB), students, alumni, administration, ACCE, and departmental faculty. All faculty in the department participate in the mapping of program objectives into specific courses. Student learning outcomes are assessed in courses on an annual basis. Based on the feedback obtained revisions to existing courses and the addition of new courses are proposed by the program faculty. These recommendations are brought forth to the entire faculty for discussion and approval. The selection of courses to be offered is jointly undertaken by the program coordinator and the chair based on the dictates of the four year construction curriculum and resource optimization imperatives.

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

Annually the chairs in each college communicate new faculty needs to their respective deans. The chair of the Department of Engineering Technology is apprised of needs in the construction program (and all other programs) by the program coordinator. The chair consolidates all departmental requests and submits an ordered list to the dean. Deans in turn make similar submissions for their respective colleges. The Provost then makes the final decision on new faculty allocation for each department. Once a position is approved the chair, with input from the program coordinator, assembles a search committee. This committee is then charged with making hiring recommendations to the chair. Specific processes used at all levels are driven by university, college and departmental policy and procedure documents as appropriate. Teaching loads are determined by the chair in consultation with program coordinators. The final decision is influenced by each faculty member's articulated commitments (on an annual basis) to the areas of teaching, research and scholarship. On occasion, in order to strike a balance between faculty resource availability and the total teaching load, the chair might make one time, per course hires.

c. **Facilities: Assignment of rooms; class size limits; management of assigned space.**

The Department of Engineering Technology has two, first call, large-size classrooms (i.e., 100 seat capacity). These are RFM 3224 and RFM 3241. Additionally, RFM 4234, RFM 4233 and RFM 4231, which can accommodate 40, 40 and 50 students respectively, are available for scheduling construction related courses. RFM 4236 and RFM 1240 are computer aided design laboratories with a seating capacity of 24 and 36 respectively wherein the Architectural Design and BIM courses are taught. Thus, instructional spaces with a variety of capacity and functional capability are available for the construction program. Typically, the class size limit of lower division and non laboratory activity based courses is 80 students, while upper division and laboratory activity based classes accommodate up to 50 students. Laboratory activity classes having lectures of 50 students will typically break out into two labs of not more than 25 students each. Based on additional needs the Department can request the usage of instructional spaces from other academic units in the Mitte building or nearby, such as the Departments of Physics, Biology and the Ingram School of Engineering. The Department of Engineering Technology has likewise cooperated with these departments in offering unused classroom space as the need arises.

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

All of the units in the College of Science and Engineering receive annual operating budgets. The budget is organized into two broad categories, wages and salaries for personnel and a maintenance and operating budget (M&O). Faculty and staff salaries remain reasonably constant from year to year though an individual employee's salary may be increased as the result of either a merit raise or a promotion in rank. In those years when salary increases occur the departmental salary budget increases correspondingly. When annual merit monies are made available to the department, the chair with the input of the departmental personnel committee makes merit recommendations for each faculty member to the dean. The M&O budget is used for items such as travel, supplies, repairs, and capital equipment, etc. Annual M & O budgets of all academic units are determined by a complex formula stemming from the office of the Provost. Our current departmental budget adequately covers all routine operational expenses.

e. **Evaluation: Evaluation of program effectiveness.**

Several sources of data provide information useful in the evaluation of students, faculty, the construction program, and the department. Such sources include alumni surveys, senior exit surveys, internship industrial supervisor evaluations and the annual student learning outcomes assessment process. The key vehicle for student learning outcomes assessment is the course assessment process which is undertaken by all faculty teaching construction related courses. Student learning outcomes are assessed at both the course and program level. Course level outcomes are documented for each course

and the process of conducting student learning assessment is standardized across all courses. Program level outcomes are assessed annually as a function of the university's broader Academic Development and Assessment initiative. The results of these program level assessments are posted to the university's Academic Development and Assessment web site at the end of each spring semester. The quality and effectiveness of faculty teaching is evaluated through in-class peer observations and by student surveys. Additionally, all faculty are also evaluated through an annual process by which faculty submit Personal Professional Objectives (PPO) in the areas of teaching, scholarship and service. Lastly, accreditation activities, alumni surveys, senior exit surveys, input from the CAB and industrial supervisors of internships result in a robust evaluation of the program and department.

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.

Two accreditation efforts are pivotal in these improvement efforts. The foremost is the ACCE accreditation process. The second is the Southern Association of Colleges and Schools (SACS) accreditation process in which the Department of Engineering Technology and the construction program participate. Both processes require the establishment of program mission, goals, and objectives, etc. The program level objectives are mapped to objectives in specific technology courses in which measurements are periodically made and corrective/improvement strategies are identified. Program and departmental level improvement opportunities are identified through alumni surveys and through input from the industry and university administration. Lastly, faculty attend national conventions of the ACCE, Associated Schools of Construction (ASC), American Society for Engineering Education (ASEE) and Association of Technology Management and Applied Engineering (ATMAE). At these venues faculty often make professional presentations and learn of innovative practices from across the state and nation. All of the information received is consolidated by the program faculty and recommendations for improvement are presented to the larger departmental faculty for consideration and eventual adoption.

C. Related Programs

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

The construction program is closely related to programs including math, the sciences, business, interior design (ID), concrete industry management (CIM), engineering technology (ET), industrial technology (IT) and engineering. Such relationships ensure the quality of learning and research experiences for students and foster collaborations among faculty that enhance faculty development and scholarship.

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

No formal provisions have been established. However, the faculty and administration at all levels encourage and support interface and interaction. Strong pedagogical interface exits between the construction program and programs in business, ID, CIM, math, science and engineering. Collaborative research efforts exist between the construction faculty and the faculty in science, ET, IT, CIM and engineering.

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.

The Construction Science and Management program is not a budgetary unit within the university's accounting system. It is instead a curricular unit within the Department of Engineering Technology, which is the lowest level in the accounting system that offers a segregated budget. The department is home to several other curricular units including Engineering Technology, Industrial Technology, and Concrete Industry Management. While it is relatively easy to provide a breakdown of faculty salaries by curricular affiliation, segregating the M & O purchases associated with a particular curricular unit is much more difficult. The funds provided by the university for M & O purposes are not earmarked for specific curricular units, and it is the responsibility of the department chair to husband these funds in the best interests of the department and of the several curricular units subsumed therein. The revenues reported below represent overall department level budgets. These revenues represent the annual budget that was available as of the beginning of FY 2011 (i.e., September 1, 2010). The table of expenditures represents how those funds had been expended at the end of the fiscal year (i.e., on August 31, 2011). To the extent possible, additional summaries have been provided which should offer insights into expenditures that were specific to the construction program. Summaries of these construction-specific expenditures have been provided for each of the last two years (i.e., FY 2010 and 2011).

Fig. 1 Department of Engineering Technology Operating Revenue for Prior Fiscal Year

Source	Amount ($)	%
Institutional Funds (Includes both salaries and M & O budgets)	$1,675,671.34	94.59
General Discretionary	$ 25,952.00	1.46
Construction Funds (Private endowments from industry donors)	$ 69,909.00	3.95
Total Operating Revenue	**$1,771,532.34**	**100.00%**

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

Fig. 2 Department of Engineering Technology Expenditures for Prior Fiscal Year

Type of Expenditure	Amount ($)	%
Full Time Faculty Salaries	$1,036,780.26	62.49
Adjunct Salaries (Per-course faculty)	$ 44,450.00	2.68
Other Salaries and Wages	$ 307,282.76	18.52
Office Supplies, Equipment, Travel, Student Wages, Etc. (Usually referred to as M & O budget)	$ 270,634.22	16.31
Total Expenditure	**$1,659,147.24**	**100.00%**

The distribution of expenditures from the departmental M & O budget will necessarily vary from one year to the next. Figure 3 below provides a two-year look back at M & O expenditures for the Construction Science and Management program relative to other curricular programs and the departmental budget as a whole. These expenditures were compiled by examining records of purchase orders, travel expense reports, facility work orders, etc. and classifying each according to whether or not the particular purchase was made on behalf of the construction program. While the expenditures cited in Figure 3 should be accurate, they were compiled by manually sifting through departmental purchase records for the past two years. The university's accounting software does not permit segregation of the departmental M & O budget by curricular program.

Fig. 3 Construction Unit Maintenance & Operation Budget (Two-year look back)

FY 2011

Type of Expenditure	Construction	Other Programs	Allocated Budget
Faculty travel	$ 4,670	$ 21,823	$ 28,947
Student travel	$ 2,434 = $7,104		
Capital equipment	$ 29,447	$ 18,565	$ 48,012
Repair/maintenance	$ 1,746	$ 16,904	$ 18,650
Consumables	$ 21,281	$ 66,578	$ 87,859
Student wages	$ 1,700	$ 27,410	$ 29,110
Total	**$ 61,278**	**$ 151,300**	**$ 212,578**
Admin/Overhead			$ 58,056

Beginning Fiscal Year Balance: $270,634

FY 2010

Type of Expenditure	Construction	Other Programs	Allocated Budget
Faculty travel	$ 7,347	$ 14,870	$ 27,000
Student travel	$ 4,783 =$12,130		
Capital equipment	$ 2,000	$ 7,202	$ 9,202
Repair/maintenance	$ 7,592	$ 25,724	$ 33,316
Consumables	$ 25,041	$ 71,590	$ 96,631
Student wages	$ 1,645	$ 23,169	$ 24,814
Total	**$ 48,408**	**$ 142,555**	**$ 190,963**
Admin/Overhead			$ 75,277

Beginning Fiscal Year Balance: $266,240

An examination of the data presented in Figure 3 reveals that in FY 2011 22.64% of the overall departmental M & O budget was expended on behalf of the construction program (i.e., $61,278/$270,634 X 100). Another 55.91% of purchases were devoted to other academic programs ($151,300/$270,634 X 100), and the remaining 21.45% went to cover a variety of administrative, clerical and other overhead costs ($58,056/$270,634 X 100). The prior year, FY 2010, construction program expenditures amounted to 18.18% of the overall departmental M & O budget ($48,408/$266,240 X 100), while 53.54% was spent on other curricular programs ($142,555/$266,240 X 100), and the remaining 28.28% went for administrative, clerical, and overhead costs ($75,277/$266,240 X 100).

The Construction Science and Management program is one of five major curricular programs in the department, the others being Engineering Technology, Industrial Technology, Concrete Industry Management, and the Master of Science in Technology program. With construction program expenditures running at between 18 and 23% of total departmental purchases, clearly this program is receiving financial support commensurate with its importance and its relative enrollment. In FY 2011, 56% of departmental purchases was divided among the other four academic programs (i.e., approximately 14% each). In FY 2010, the other four programs received 53% of total expenditures (i.e., approximately 13% each).

Although there can be many reasons for year over year fluctuations in departmental expenditures, program enrollment is probably the single most important factor driving these purchases. In the fall semester of 2011 construction program enrollment stood at 45.6% of total departmental undergraduate enrollment (including pre-construction majors). Engineering Technology majors comprised 32.9% of departmental enrollment. Industrial Technology majors comprised another 9.5%, and Concrete Industry Management majors the remaining 12%. As the single largest major count in the department, it is not surprising that construction program expenditures would run higher as a proportion of the departmental M & O budget than other programs in the unit.

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

There are general sources of “non-recurring” funds for the Department of Engineering Technology and the construction program. The sources for these funds are career fairs, golf tournaments, continuing education courses, gifts, etc. The Department of Engineering Technology has a discretionary fund that was at a level of $25,952.00 as of September 1, 2010. This is available to facilitate the mission of the entire department (the construction program included). The construction program specific funds include the Construction Discretionary Fund and the Construction Excellence Endowment which were at levels of $18,022.00 and $59,520.00 respectively. These funds are used to supplement faculty and student travel, enrich scholarship endowments, underwrite CAB meeting related expenses, etc.

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

The departmental budget, along with the non-recurring funds, have been more than adequate to allow the construction program to achieve its goals. Thus, such diverse functions as providing travel support for faculty and students, purchasing equipment, materials and supplies for instructional and research purposes, providing outstanding office and technical staff support, and providing instructional assistance have all been met very well.

E. Comparable Program Budgets

Please see Figure 3 above for a breakdown of how departmental expenditures made on behalf of the construction program compare with expenditures made on behalf of other curricular programs housed in the department of Engineering Technology.

III. CURRICULUM

A. Program Description

1. **Construction program title:** Construction Science and Management

2. **Degree title:** Bachelor of Science in Construction Science and Management

3. **Credit hours required for the degree:**
   Semester hours 127 hours .

4. **List program options.** None

5. **List other degree programs administered by the construction unit.** None

B. Institutional Requirements

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

Following is a specific list of the "Texas General Education Core Curriculum" required by the State of Texas for all students graduating with a four year degree. This state mandated curriculum contains courses selected from 11 different categories ranging from "Communications: to "Institutionally Designated Option". Under some categories, the state requires specific courses while under other options, the state provides a list of acceptable courses from which the applicable course for a specific major can be selected. For example, the state specifically requires both English 1310 and 1320 under the "Communication" category, but allows the specific majors to select the appropriate math class from a list of eight (8) acceptable courses. Below are listed the specific "Texas General Education Core Curriculum" courses that are required for the BS in Construction Science and Management Degree. For a complete listing of all state acceptable courses, please access their website at http://statecore.its.txstate.edu.

State Requirements for University General Education Core Curriculum

10 – Communication (2 courses) - 6 credit hours
English 1310 – College Writing I
English 1320 – College Writing II

11 – Additional Communication (1 course) - 3 credit hours
Communication 1310 – Fundamentals of Human Communication

20 – Mathematics (1 course) - 3-4 credit hours
Math 2417 – Pre-Calculus Mathematics

30 – Natural Science (2 courses) - 7-8 credit hours
(If both courses are from the same science, one may be a non-lab, 3-hour course. Note that 3-hour courses do not have an integrated laboratory; 4-hour courses do have an integrated laboratory.)
Chemistry 1341 – General Chemistry I and Chemistry 1141 – General Chemistry Laboratory I
Physics 1410 – General Physics I

40 – Humanities (1 course) - 3 credit hours
English 2310 – British Literature before 1785
English 2320 – British Literature since 1785
English 2330 – World Literature before 1600
English 2340 – World Literature since 1600
English 2359 – American Literature before 1865
English 2360 – American Literature since 1865

41 – Additional Humanities (1 course) - 3 credit hours
Philosophy 1320 – Ethics & Society

50 – Visual and Performing Arts (1 course) - 3 credit hours
Art 2313 – Introduction to the Fine Arts
Dance 2313 – Introduction to the Fine Arts
Music 2313 – Introduction to the Fine Arts
Theatre 2313 – Introduction to the Fine Arts

60 – History (2 courses) - 6 credit hours
History 1310 – History of the United States to 1877
History 1320 – History of the united States, 1877 to date

70 – Government (2 courses) - 6 credit hours
Political Science 2310 – Principles of American Government
Political Science 2320 – Functions of American Government

80 – Social and Behavioral Sciences (1 course) - 3 credit hours
Economics 2301 – Principles of Economics

90 – Institutionally Designed Option - 3 credit hours
U.S. 1100 – University Seminar
and 2 Personal Fitness and Well-Being (PFW) courses

2. State the curricular requirements established at the institutional level.

Entrance requirements to Texas State University-San Marcos for students with no previous college experience are:

1) Required SAT I or ACT test scores and high school class rank.
2) Satisfy general admission requirements.
3) Submit the Apply Texas Application which includes an essay.
4) Submit official high school transcript.

Page 10 of the 2010-2012 university catalog provides more details.

3. State the curricular requirements established at the college level.

The College of Science and Engineering requires a minimum of nine (9) hours of Writing Intensive coursework in addition to the "Texas General Education Core Curriculum" requirements. A Writing Intensive course is defined as a course in which "….*at least 65% of the course grade must be based on written assignments and a minimum of one extended piece of writing is required.*" (Pg. 46 of the 2010/2012 University Catalog). This is the only additional college requirement.

C. Plan of Study

1. Date of most recent curriculum revision.

Fall of 2011, with an implementation date of Fall 2013.

2. List the course requirements by semester or quarter.

Bachelor of Science
Major in Construction Science and Management
Minimum required: 127 semester hours

General Requirements (Page 330, 2010-2012 University Catalog):

1. A minimum of 9 writing intensive hours and a total of 36 advanced hours are required to graduate. An advanced course is one that is numbered above 3000 and below 5000.

2. Departmental requirements that also satisfy the general education core curriculum requirements for the following components: mathematics- MATH 2417; natural science- CHEM 1341/1141 and PHYS 1410; humanities and visual and performing arts component – PHIL 1320; and social science- ECO 2301. See the University College section of the university catalog for the English literature requirements.
3. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

4. Effective Fall 2010: No "D" grades received at other institutions will be credited towards the major.

5. Effective Fall 2010: Students will enter the 30 semester hour Pre-Construction Curriculum, which will consist of MATH 2328, MATH 2417, CHEM 1341 & 1141, PHYS 1410, PHYS 1420, TECH 1260, TECH 2313, TECH 2342 and TECH 2360. No grade lower than a "C" will be accepted and a 2.5 GPA must be maintained in these classes before a student will be allowed to enroll in advanced level Construction courses.

Freshman Year

Semester I	*Hrs.*	*Semester II*	*Hrs.*
TECH 1260 – Introduction to the Construction & Concrete Industry	2	MATH 2328 – Elementary Statistics	3
CHEM 1141, 1341 – General Chemistry I	4	PHYS 1410 – General Physics 1	4
MATH 2417 – Pre-Calculus	4	TECH 2313 – Fundamentals of Architectural Problem Solving & Design	3
US 1100 – University Seminar	1	ENG 1320 – College Writing II	3
ENG 1310 – College Writing I	3	POSI 2320 – Functions of American Government	3
POSI 2310 – Principles of American Government	3		16
	17		

Sophomore Year

Semester I	*Hrs.*	*Semester II*	*Hrs.*
PHYS 1420 – General Physics II	4	COMM 1310 – Fundamentals of Human Communication	3
ACC 2301 – Accounting in Organizations and Society	3	TECH 2351 – Statics and Strength of Materials	3
TECH 2342 – Construction Materials & Processes	3	TECH 2360 – Residential Construction Systems	3
BLAW 2361 – Legal Environment of Buildings	3	ECO 2301 – Principles of Economics	3
PHIL 1320 – Ethics and Society	3	HIST 1310 – History of the United States to 1877	3
	16		15

Junior Year

Semester I	*Hrs.*	*Semester II*	*Hrs.*
TECH 2160 – Introduction to Construction Surveying & Site Layout	1	TECH 3360 – Structural Analysis	3
TECH 4313 – Advanced Architectural Design	3	TECH 3363 – Heavy, Civil & Highway Construction Systems	3
TECH 2344 – Power Technology	3	TECH 3361 – Commercial Building Construction Systems	3
TECH 3366 – Soils and Foundation	3	TECH 3367 – Mechanical, Electrical and Plumbing Systems	3
ENG Literature (see general requirement 2)	3	ART, DAN, MU or TH 2313 – Introduction to Fine Art	3
HIST 1320 – History of the United States 1877 to Date	3		15
PFW, 1 credit – Personal Fitness & Well Being	1		
	17		

Summer – Junior or Senior Year

TECH 4390 – Internship	3
	3

Senior Year

Semester I	*Hrs.*	*Semester II*	*Hrs.*
MKT 3343 – Principles of Marketing	3	TECH 4360 – Construction Contract Administration Site Organization	3
TECH 4361 – Construction Estimating	3	TECH 4364 – Construction Project Management & Scheduling	3
MGT 3303 – Management of Organizations	3	TECH 4368 – Environmentally Conscious Design & Construction	3
TECH 4369 – Construction Contracts, Liability & Ethics	3	CIS 3317 – E-Business	3
TECH 4380 – Industrial Safety	3	PFW, 1 credit – Personal Fitness & Well Being	1
	15		13

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."

Construction Science and Management Degree
(Fall 2011 – Spring 2012)
127 Semester Hours

Fig. 5 General Education **33** **Credit Hours**

Course No.	Course Title	Credit Hours
ENG 1310	College Writing I	3
ENG 1320	College Writing II	3
ENG LIT	English Lit (choose 1 from 6 offerings; pg. 46 of catalog)	3
COMM 1310	Fundamentals of Human Communication	3
Intro to Fine Arts 2313	ART, MU, TH, or DAN; pg 46 of catalog	3
PHIL 1320	Ethics in Society	3
HIST 1310	History of the United States to 1877	3
HIST 1320	History of the United States 1877 to Present	3
POSI 2310	Principle of American Government	3
POSI 2320	Function of American Government	3
US 1100	University Seminar	1
PFW	Two, 1 credit courses in Physical Fitness and Wellness	2

Fig. 6 Mathematics and Science **19** **Credit Hours**

Course No.	Course Title	Credit Hours
CHEM 1141	General Chemistry Lab I	1
CHEM 1341	General Chemistry Lec. I	3
MATH 2328	Elementary Statistics	3
MATH 2417	Pre-Calculus	4
PHYS 1315 & 1115	General Physics I (Formerly PHYS 1410)	4
PHYS 1325 & 1125	General Physics II (Formerly PHYS 1420)	4

Fig. 7 Business and Management (Business Minor) **18** **Credit Hours**

Course No.	Course Title	Credit Hours
ACC 2301	Accounting in Organizations and Society	3
BLAW 2361	Legal Environment of Business	3
ECO 2301	Principles of Economics	3
CIS 3317	E-Business	3
MGT 3303	Management of Organizations	3
MKT 3343	Principles of Marketing	3

Fig. 8 Construction Science **25** **Credit Hours**

Course No.	Course Title	Credit Hours
TECH 2160	Introduction to Construction Surveying and Site Layout	1
TECH 2313	Fundamentals of Architectural Problem-Solving and Design	3
TECH 2342	Construction Materials and Processes	3
TECH 2344	Power Technology	3
TECH 2351	Statics and Strength of Materials	3
TECH 3360	Structural Analysis	3
TECH 3366	Soils and Foundations	3
TECH 3367	Mechanical, Electrical and Plumbing Systems	3
TECH 4313	Advanced Architectural Design	3

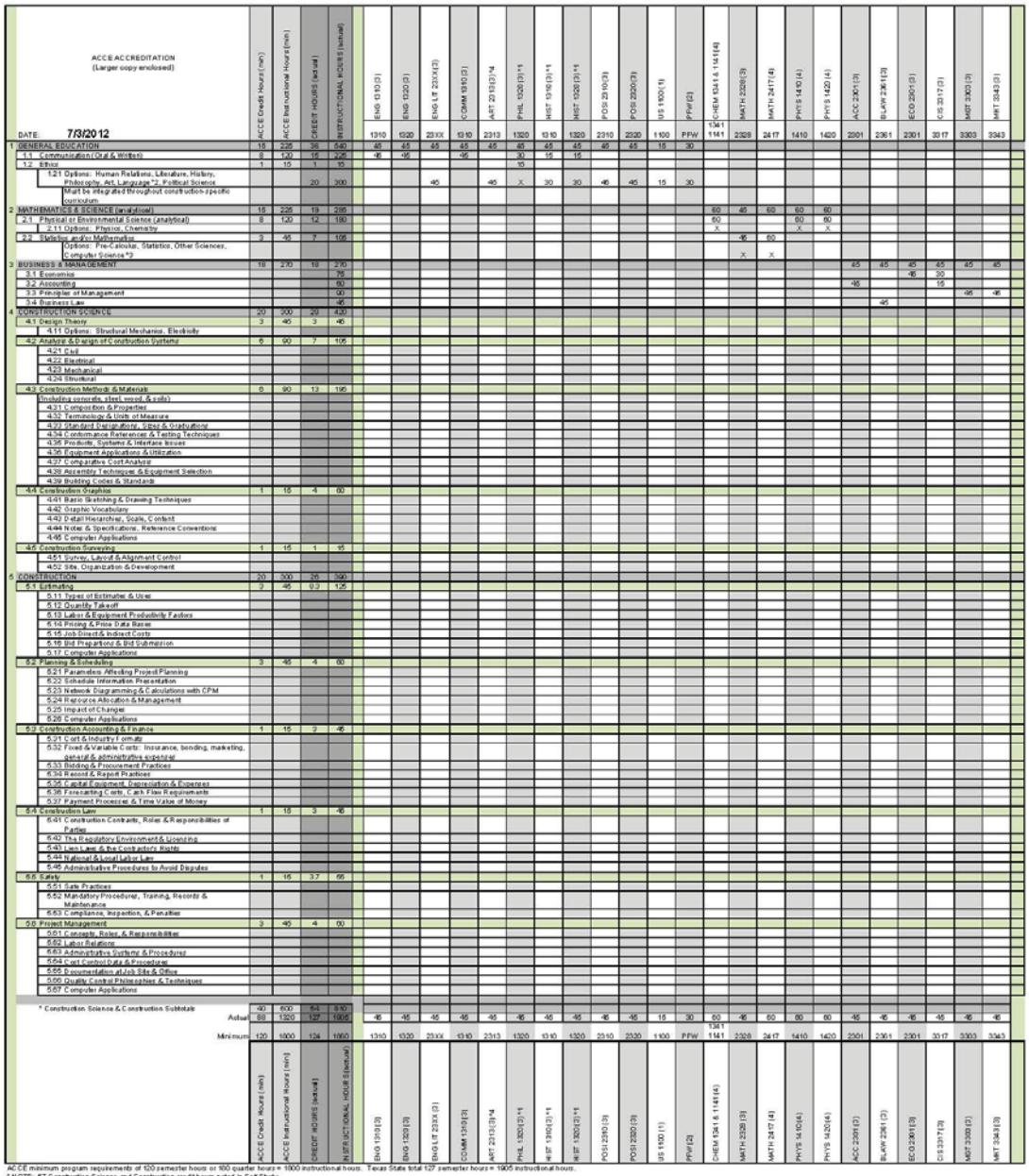
Fig. 9 Construction **32** **Credit Hours**

Course No.	Course Title	Credit Hours
TECH 1260	Introduction to the Construction and Concrete Industry	2
TECH 2360	Residential Construction Systems	3
TECH 3361	Commercial Building Construction Systems	3
TECH 3363	Heavy, Civil and Highway Construction Systems	3
TECH 4360	Construction Contract Administration	3
TECH 4361	Construction Estimating	3
TECH 4364	Construction Project Management and Scheduling	3
TECH 4368	Environmentally Conscious Design and Construction	3
TECH 4369	Construction Contracts, Liability and Ethics	3
TECH 4380	Industrial Safety	3
TECH 4390	Internship	3

E. Required Curriculum Categories, Core Subject Matter, and Curriculum Topical Content

Provide evidence of inclusion of the required curriculum categories, core subject matter, and curriculum topical content using the following matrix.

Chart 3. Matrix



ACCE ACCREDITATION (Larger copy enclosed)	ACCE Credit Hours (min)	ACCE Instructional Hours (min)	CREDIT HOURS (actual)	INSTRUCTIONAL HOURS (actual)	ENG 1310 (3)	ENG 1320 (3)	ENGLIT 23XX (3)	COMM 1310 (3)	ART 2313 (3)*4	PHIL 1320 (3)*1	HIST 1310 (3)*1	HIST 1320 (3)*1	POSI 2310 (3)	POSI 2320 (3)	IMS 1100 (1)	PFW (2)	CHEM 1341 & 1141 (4)(4)	MATH 2328 (3)	MATH 2417 (4)	PHYS 1410 (4)	PHYS 1420 (4)	ACC 2301 (3)	BLAW 2361 (3)	ECO 2301 (3)	CIS 2317 (3)	MGT 3303 (3)	MKT 3343 (3)
DATE 7/3/2012					1310	1320	23XX	1310	2313	1320	1310	1320	2310	2320	1100	PFW	1341 1141	2328	2417	1410	1420	2301	2361	2301	3317	3303	3343
1 GENERAL EDUCATION	15	225	36	540	45	45	45	45	45	45	45	45	45	45	15	30											
1.1 Communication (Oral & Written)	9	120	15	225	45	45		45		30	15	15															
1.2 Ethics	1	15	1	15						15																	
1.21 Options: Human Relations, Literature, History, Philosophy, Art, Language *2, Political Science			20	300			45		45	X	30	30	45	45	15	30											
Must be integrated throughout construction-specific curriculum																											
2 MATHEMATICS & SCIENCE (analytical)	15	225	19	285													60	45	60	60	60						
2.1 Physical or Environmental Science (analytical)	8	120	12	180													60			60	60						
2.11 Options: Physics, Chemistry																	X			X	X						
2.2 Statistics and/or Mathematics	3	45	7	105														45	60								
Options: Pre-Calculus, Statistics, Other Sciences, Computer Science *3																		X	X								
3 BUSINESS & MANAGEMENT	18	270	18	270																		45	45	45	45	45	45
3.1 Economics				75																				45	30		
3.2 Accounting				60																		45			15		
3.3 Principles of Management				90																						45	45
3.4 Business Law				45																			45				
4 CONSTRUCTION SCIENCE	20	300	20	420																							
4.1 Design Theory	3	45	3	45																							
4.11 Options: Structural Mechanics, Electricity																											
4.2 Analysis & Design of Construction Systems	6	90	7	105																							
4.21 Civil																											
4.22 Electrical																											
4.23 Mechanical																											
4.24 Structural																											
4.3 Construction Methods & Materials	6	90	13	195																							
(Including concrete, steel, wood, & soils)																											
4.31 Composition & Properties																											
4.32 Terminology & Units of Measure																											
4.33 Standard Designations, Sizes & Gradations																											
4.34 Conformance References & Testing Techniques																											
4.35 Products, Systems & Interface Issues																											
4.36 Equipment Applications & Utilization																											
4.37 Comparative Cost Analysis																											
4.38 Assembly Techniques & Equipment Selection																											
4.39 Building Codes & Standards																											
4.4 Construction Graphics	1	15	4	60																							
4.41 Basic Sketching & Drawing Techniques																											
4.42 Graphic Vocabulary																											
4.43 Detail Hierarchies, Scale, Content																											
4.44 Notes & Specifications, Reference Conventions																											
4.45 Computer Applications																											
4.5 Construction Surveying	1	15	1	15																							
4.51 Survey, Layout & Alignment Control																											
4.52 Site, Organization & Development																											
5 CONSTRUCTION	20	300	25	390																							
5.1 Estimating	3	45	0.3	125																							
5.11 Types of Estimates & Uses																											
5.12 Quantity Take-off																											
5.13 Labor & Equipment Productivity Factors																											
5.14 Pricing & Price Data Bases																											
5.15 Job Direct & Indirect Costs																											
5.16 Bid Preparation & Bid Submission																											
5.17 Computer Applications																											
5.2 Planning & Scheduling	3	45	4	60																							
5.21 Parameters Affecting Project Planning																											
5.22 Schedule Information Presentation																											
5.23 Network Diagramming & Calculations with CPM																											
5.24 Resource Allocation & Management																											
5.25 Impact of Changes																											
5.26 Computer Applications																											
5.3 Construction Accounting & Finance	1	15	3	45																							
5.31 Cost & Industry Formats																											
5.32 Fixed & Variable Costs: Insurance, bonding, marketing, general & administrative expenses																											
5.33 Bidding & Procurement Practices																											
5.34 Record & Report Practices																											
5.35 Capital Equipment, Depreciation & Expenses																											
5.36 Forecasting Costs, Cash Flow Requirements																											
5.37 Payment Processes & Time Value of Money																											
5.4 Construction Law	1	15	3	45																							
5.41 Construction Contracts, Roles & Responsibilities of Parties																											
5.42 The Regulatory Environment & Licensing																											
5.43 Lien Laws & the Contractor's Rights																											
5.44 National & Local Labor Law																											
5.45 Administrative Procedures to Avoid Disputes																											
5.5 Safety	1	15	3.7	60																							
5.51 Safe Practices																											
5.52 Mandatory Procedures, Training, Records & Maintenance																											
5.53 Compliance, Inspection, & Penalties																											
5.6 Project Management	3	45	4	60																							
5.61 Concepts, Roles, & Responsibilities																											
5.62 Labor Relations																											
5.63 Administrative Systems & Procedures																											
5.64 Cost Control Data & Procedures																											
5.65 Documentation at Job Site & Office																											
5.66 Quality Control Philosophies & Techniques																											
5.67 Computer Applications																											
* Construction Science & Construction Subtotals	40	600	64	840																							
Actual	88	1320	127	1905	45	45	45	45	45	45	45	45	45	45	15	30	60	45	60	60	60	45	45	45	45	45	45
Minimum	120	1800	126	1950	1310	1320	23XX	1310	2313	1320	1310	1320	2310	2320	1100	PFW	1341 1141	2328	2417	1410	1420	2301	2361	2301	3317	3303	3343

ACCE minimum program requirements of 120 semester hours or 180 quarter hours = 1800 instructional hours. Texas State total 127 semester hours = 1905 instructional hours.

* NOTE: 67 Construction Science and Construction credit hours noted in Self Study.

GENERAL EDUCATION NOTES

* 1 This course is designated as "Writing Intensive" which means that 65% of the course grade must be determined by writing activities including an extensive piece of writing (page 366 of the 2012-2014 catalog).
* 2 Eight hours of foreign language required at Texas State if a student did not complete two years of a foreign language in high school.
* 3 Three hours of computer literacy required at Texas State if a student did not complete one year of computer history in high school.
* 4 Students can select from ART 2313, TH 2313, MU 2313, or DAN 2313.

CONSTRUCTION CURRICULUM NOTES

* 5 TECH 4390 is the internship course served after a student completes all math and science courses, has 75 hours towards a degree, has a 2.0 overall GPA, and a 2.25 major GPA. Course is also writing intensive.

ACCE ACCREDITATION

DATE: 7/3/2012

ACCE ACCREDITATION	TECH 1260 (2) Introduction to The Construction & Concrete Industry	TECH 2160 (1) Introduction to Construction Surveying & Site Layout	TECH 2313 (3) Fundamentals of Architectural Problem-Solving & Design	TECH 2342 (3) Construction Materials & Processes	TECH 2344 (3) Power Technology	TECH 2351 (3) Statics & Strength of Materials	TECH 2360 (3) Residential Construction Systems	TECH 3360 (3) Structural Analysis	TECH 3361 (3) Commercial Building Construction Systems	TECH 3363 (3) Heavy, Civil, & Highway Construction Systems	TECH 3366 (3) Soils & Foundations	TECH 3367 (3) Mechanical, Electrical, & Plumbing Systems	TECH 4313 (3) Advanced Architectural Design	TECH 4360 (3) Construction Contract Administration	TECH 4361 (3) Construction Estimating	TECH 4364 (3) Construction Project Management & Scheduling	TECH 4368 (3) Environmentally Conscious Design & Construction	TECH 4369 (3) Construction Contracts, Liability, & Ethics	TECH 4380 (3) Industrial Safety *1	TECH 4390 (3) Internship *1 *5	ACTUAL HOURS (total)	INSTRUCTIONAL HOURS (actual)
DATE: 7/3/2012	1260	2160	2313	2342	2344	2351	2360	3360	3361	3363	3366	3367	4313	4360	4361	4364	4368	4369	4380	4390		
1 GENERAL EDUCATION																				45	540	540
1.1 Communication (Oral & Written)	X												X	X			X		X	30	225	225
1.2 Ethics	X						X		X					X	X			X	X		15	15
1.21 Options: Human Relations, Literature, History, Philosophy, Art, Language *2, Political Science																				15	300	300
Must be integrated throughout construction-specific curriculum																						
2 MATHEMATICS & SCIENCE (analytical)																					205	205
2.1 Physical or Environmental Science (analytical)																					180	180
2.11 Options: Physics, Chemistry																						
2.2 Statistics and/or Mathematics																					105	105
Options: Pre-Calculus, Statistics, Other Sciences, Computer Science *3																						
3 BUSINESS & MANAGEMENT																					270	270
3.1 Economics																					75	75
3.2 Accounting																					60	60
3.3 Principles of Management																					90	90
3.4 Business Law																					45	45
4 CONSTRUCTION SCIENCE	5	15	45	45	45	45	5	45	15	10	45	45	45	5			5				420	420
4.1 Design Theory						30		15													45	45
4.11 Options: Structural Mechanics, Electricity						X											420					
4.2 Analysis & Design of Construction Systems						15		20	5	5	15	30	15								105	105
4.21 Civil						X				X	X		X									
4.22 Electrical												X	X									
4.23 Mechanical												X	X									
4.24 Structural						X	X	X	X				X									
4.3 Construction Methods & Materials	5		5	45	45		5	10	10	5	30	15	15				5				195	195
(Including concrete, steel, wood, & soils)																						
4.31 Composition & Properties	X		X	X			X	X	X	X	X											
4.32 Terminology & Units of Measure			X	X			X	X	X	X	X	X	X				X					
4.33 Standard Designations, Sizes & Graduations			X	X			X	X	X				X				X					
4.34 Conformance References & Testing Techniques				X					X													
4.35 Products, Systems & Interface Issues									X				X									
4.36 Equipment Applications & Utilization					X			X	X	X		X										
4.37 Comparative Cost Analysis									X	X		X										
4.38 Assembly Techniques & Equipment Selection			X		X		X		X			X										
4.39 Building Codes & Standards							X		X			X	X									
4.4 Construction Graphics			40										15	5							60	60
4.41 Basic Sketching & Drawing Techniques			X										X									
4.42 Graphic Vocabulary			X										X									
4.43 Detail Hierarchies, Scale, Content			X										X									
4.44 Notes & Specifications, Reference Conventions			X				X						X	X								
4.45 Computer Applications			X										X	X								
4.5 Construction Surveying		15																			15	15
4.51 Survey, Layout & Alignment Control		X					X		X													
4.52 Site, Organization & Development		X					X		X	X				X								
5 CONSTRUCTION	25						40		30	35				40	45	45	40	45	45		390	390
5.1 Estimating							35		20	35				10	35						125	125
5.11 Types of Estimates & Uses							X		X	X					X							
5.12 Quantity Takeoff							X		X	X				X	X							
5.13 Labor & Equipment Productivity Factors							X		X	X					X							
5.14 Pricing & Price Data Bases							X		X	X				X	X		X					
5.15 Job Direct & Indirect Costs									X					X	X							
5.16 Bid Prepartions & Bid Submission														X	X							
5.17 Computer Applications							X		X					X	X							
5.2 Planning & Scheduling														10		40	5	5			60	60
5.21 Parameters Affecting Project Planning								X						X		X	X	X				
5.22 Schedule Information Presentation														X		X						
5.23 Network Diagramming & Calculations with CPM																X						
5.24 Resource Allocation & Management																X						
5.25 Impact of Changes																		X				
5.26 Computer Applications														X		X						
5.3 Construction Accounting & Finance	10								5	10				5	10			5			45	45
5.31 Cost & Industry Formats	X								X	X								X				
5.32 Fixed & Variable Costs: Insurance, bonding, marketing, general & administrative expenses	X													X	X			X				
5.33 Bidding & Procurement Practices														X	X							
5.34 Record & Report Practices																		X				
5.35 Capital Equipment, Depreciation & Expenses										X												
5.36 Forecasting Costs, Cash Flow Requirements																		X				
5.37 Payment Processes & Time Value of Money																		X				
5.4 Construction Law	5													5			20	15			45	45
5.41 Construction Contracts, Roles & Responsibilities of Parties	X													X			X	X				
5.42 The Regulatory Environment & Licensing																	X					
5.43 Lien Laws & the Contractor's Rights																		X				
5.44 National & Local Labor Law																		X				
5.45 Administrative Procedures to Avoid Disputes														X				X				
5.5 Safety							5		5									5	40		55	55
5.51 Safe Practices							X		X	X				X				X	X			
5.52 Mandatory Procedures, Training, Records & Maintenance																		X	X			
5.53 Compliance, Inspection, & Penalties																		X	X			
5.6 Project Management	10													10		5	15	15	5		60	60
5.61 Concepts, Roles, & Responsibilities	X													X		X	X	X				
5.62 Labor Relations																		X	X			
5.63 Administrative Systems & Procedures														X			X	X				
5.64 Cost Control Data & Procedures																		X				
5.65 Documentation at Job Site & Office														X			X	X				
5.66 Quality Control Philosophies & Techniques														X				X				
5.67 Computer Applications																						
	30	15	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	1905	1905
	1260	2160	2313	2342	2344	2351	2360	3360	3361	3363	3366	3367	4313	4360	4361	4364	4368	4369	4380	4390		

TECH 1260(2) Introduction to the Construction & Concrete Industry | TECH 2160(1) Introduction to Construction Surveying & Site Layout | TECH 2313(3) Fundamentals of Architectural Problem-Solving & Design | TECH 2342(3) Construction Materials & Processes | TECH 2344(3) Power Technology | TECH 2351(3) Statics & Strength of Materials | TECH 2360(3) Residential Construction Systems | TECH 3360(3) Structural Analysis | TECH 3361(3) Commercial Building Construction Systems | TECH 3363(3) Heavy, Civil, & Highway Construction Systems | TECH 3366(3) Soils & Foundations | TECH 3367(3) Mechanical, Electrical, & Plumbing Systems | TECH 4313(3) Advanced Architectural Design | TECH 4360(3) Construction Contract Administration | TECH 4361(3) Construction Estimating | TECH 4364(3) Construction Project Management & Scheduling | TECH 4368(3) Environmentally Conscious Design & Construction | TECH 4369(3) Construction Contracts, Liability, & Ethics | TECH 4380(3) Industrial Safety *1 | TECH 4390(3) Internship *1 *5 | ACTUAL HOURS (total) | INSTRUCTIONAL HOURS (actual)

F. Degree Requirements – Two Year Associate Degree Program

List the courses and credit hours required for the degree. Group according to the specified divisions and subdivisions as defined in ACCE Form 103, Standards and Criteria for Two Year Associate Degree Programs. Courses are to be classified according to 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."

N/A

G. 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.

N/A

H. Course Sequencing

List the courses with their prerequisites or co requisites or provide a precedence diagram showing the prerequisite and co requisite interdependency of the courses. Courses without prerequisites need not be shown.

Math and Science Course Prerequisite

Courses	Mathematics & Science Pre- and/or Co-Requisites
CHEM 1341 – General Chemistry I	Prerequisite: SAT 520 or MATH 1315 with a grade of 'C' or higher.
CHEM 1141 – General Chemistry Laboratory I	Co-Requisite: CHEM 1341 or CHEM 1310.
MATH 2328 – Elementary Statistics	Prerequisite: MATH 1315 with a grade of 'C' or higher.
MATH 2417 – Pre-Calculus Mathematics	Prerequisite: SAT 520 or MATH 1315 with a grade of 'C' or higher.
PHYS 1315 & 1115 – General Physics I (PHYS 1410)	Prerequisite: MATH 1315 with a grade of 'C' or higher. MATH 1317 is recommended.
PHYS 1325 & 1125 – General Physics II (PHYS 1420)	Prerequisite: PHYS 1410, MATH 1315 with a grade of 'C' or higher. MATH 1317 is recommended.

Pre-Construction Requirements

Note: Starting in the Fall of 2011, all students entering the university under that catalog year will be required to complete the "Pre-Construction" curriculum before they will enter the Construction major, and be able to take advanced construction classes.

Following are the Pre-Construction curriculum requirements:

- No courses with a 'D' grade will be allowed to be transferred into the program from other institutions.
- No 'D' grades are accepted in any Pre-Construction courses.
- Students will be required to complete the following thirty (30) semester hours of Pre-Construction courses, while maintaining a 2.5 GPA in these classes. Upon successful completion of the specified courses, students will enter the Construction Science and Management major and will meet prerequisite course requirements for the advanced construction classes.

Pre-Construction Curriculum Classes

MATH 2328 – Elementary Statistics
MATH 2417 – Pre-Calculus
CHEM 1341 & 1141 – General Chemistry I
PHYS 1315 & 1125 – General Physics I (PHYS 1410)
PHYS 1325 & 1125 – General Physics II (PHYS 1420)
TECH 1260 – Introduction to the Construction and Concrete Industry
TECH 2313 – Fundamentals of Architectural Problem-Solving and Design
TECH 2342 – Construction Materials and Processes (Prerequisite: CHEM 1341 & 1141and PHYS 1315 & 1115)
TECH 2360 – Residential Construction Systems (Prerequisite: TECH 2342)

Note: Students can combine their Pre-Construction curriculum classes with General Education, Business Administration, and TECH prefixed classes that do not require the Pre-Construction Curriculum to be complete, such as TECH 2351 Statics and Strength of Materials and TECH 4380, Industrial Safety, to build a Fall or Spring semester of 15-17 semester hours.

Construction Course Prerequisites

Courses	Construction Pre- and/or Co-Requisites
TECH 2160 – Introduction to Construction Surveying and Site Layout	Prerequisite: Pre-Construction or Instructor's Approval
TECH 2342 – Construction Materials and Processes	Prerequisites: CHEM 1341 & 1141 and PHYS 1410
TECH 2344 – Power Technology	Prerequisite: MATH 1315 & PHYS 1315 & 1115 or 1430
TECH 2351 – Statics and Strength of Materials	Prerequisites: TECH 2342 or ENGR 2300 and PHYS 1410 or PHYS 1430
TECH 3361 – Commercial Building Construction Systems	Prerequisite: Pre-Construction or Instructor's Approval
TECH 3362 – Industrial and Offshore Construction Systems	Prerequisite: Pre-Construction or Instructor's Approval
TECH 3363 – Heavy, Civil and Highway Construction Systems	Prerequisite: Pre-Construction or Instructor's Approval
TECH 3367 – Mechanical, Electrical and Plumbing Systems	Prerequisites: Pre-Construction or Instructor's Approval
TECH 4313 – Advanced Architectural Design	Prerequisite: TECH 2313
TECH 4360 – Construction Contract Administration	Prerequisite: Pre-Construction or Instructor's Approval
TECH 4361 – Construction Estimating	Prerequisite: Pre-Construction and TECH 3361or Instructor's Approval
TECH 4364 – Construction Project Management and Scheduling	Prerequisite: Pre-Construction and TECH 4361 or Instructor's Approval
TECH 4368 – Environmentally Conscious Design and Construction	Prerequisite: Pre-Construction or ID 2329 and TECH 2313 or Instructor's Approval
TECH 4369 – Construction Contracts, Liability and Ethics	Prerequisite: Pre-Construction and Recommended: MGT 3303 and/or MGT 3360 or Instructor's Approval
TECH 4390 – Internship	Prerequisite: Consult Internship Coordinator

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.

Catalog Descriptions
2011/2012 (Addendum updated)

Abbreviations: MC = Multicultural Content MP = Multicultural Perspective
MC/P = Multicultural Content/Perspective WI = Writing Intensive
Course Codes: (x-xx) = lecture hours per week – lab hours per week
Example: (2-2) = 2 lecture hours per week and 2 lab hours per week
State Common Numbers = The letters/numbers in parenthesis represent course numbers which the State recognizes as common course numbers.
Example: (ENGL 1301)

I. General Education (33 hours)

ENG 1310 (ENGL 1301) College Writing I. (3-0) Expository writing as a means of exploring and shaping ideas. Emphasis on critical reading and the improvement of essays through revision. (MC/P)

ENG 1320 (ENGL 1302) College Writing II. (3-0) Continuation of English 1310. Expository writing as a means of analyzing and understanding texts. Research paper required. Requirements in sophomore English must be completed before a student takes any advanced work in English. (MC/P)

ENG Lit – Students will choose one of the following:

> **ENG 2310 (ENGL 2322) British Literature before 1785. (3-0)** Representative authors and works of British literature from the beginnings through the Neoclassical Period. (MC)
>
> **ENG 2320 (ENGL 2323) British Literature since 1785. (3-0)** Representative authors and works of British literature from the Romantic Period to the present. (MC)
>
> **ENG 2330 (ENGL 2332) World Literature before 1600. (3-0)** Representative authors and works of literature from the ancient world to the early modern world. Readings may come exclusively from the Western tradition or from various literary traditions, such as those of Africa and Asia. (MC)
>
> **ENG 2340 (ENGL 2333) World Literature since 1600. (3-0)** Representative authors and works of literature from the modern world. Readings may come exclusively from the Western tradition or from various literary traditions, such as those of Africa and Asia. (MC)
>
> **ENG 2359 (ENGL 2327) American Literature before 1865. (3-0)** Representative authors and works of American literature from the beginnings through the Civil War.
>
> **ENG 2360 (ENGL 2328) American Literature since 1865. (3-0)** Representative authors and works of American literature from the Civil War to the present.

COMM 1310 (SPCH 1311) Fundamentals of Human Communication. (3-0) This course examines the speaking and listening principles and techniques that are fundamental for every aspect of human communication. The course develops basic verbal and nonverbal communication skills and knowledge in three specific contexts: interpersonal, small group, and public speaking. (MC)

Students will choose one of the following ART, MU, DAN or TH 2313 classes:

> **ART 2313 (HUM 1315) Introduction to Fine Arts. (3-0)** An introductory course designed to give the student a fundamental understanding of the creation and appreciation of diverse modes of expression through the visual and performing arts.

This course may not be repeated for credit by taking MU 2313, TH 2313, or DAN 2313.

MU 2313 (HUMA 1315) Introduction to Fine Arts. (3-0) An introductory course designed to give the student a fundamental understanding of the creation and appreciation of diverse modes of expression through the visual and performing arts. This course may not be repeated for credit by taking ART 2313, DAN 2313, or TH 2313.

DAN 2313 (HUMA 1315) Introduction to Fine Arts. (3-0) An introductory course designed to give the student a fundamental understanding of the creation and appreciation of diverse modes of expression through the visual and performing arts. This course may not be repeated for credit by taking ART 2313; MU 2313; or TH 2313.

TH 2313 (HUMA 1315) Introduction to the Fine Arts. (3-0) An introductory course designed to give the student a fundamental understanding of the creation and appreciation of diverse modes of expression through the visual and performing arts. This course may not be repeated for credit by taking ART 2313, DAN 2313, or MU 2313.

PHIL 1320 Ethics and Society. (3-0) Study of ethics, its recent focus on social problems, and new fields of inquiry, including environmental ethics, ethics in business, professions, technology and sport. Also, such global issues as poverty, minority rights, and stem cell research. Emphasis on development and application of principles of critical thinking and moral reasoning.

HIST 1310 (HIST 1301) History of the United States to 1877. (3-0) (WI) A general survey of the history of the United States from its settlement to the end of Reconstruction.

HIST 1320 (HIST 1302) History of the United States, 1877 to Date. (3-0) (WI) A general survey of the history of the United States from Reconstruction to present.

POSI 2310 (GOVT 2301) Principles of American Government. (3-0) A survey of the principles of political science, of the American system of government, and of the origins and development of the constitutions of the United States and Texas. Satisfies the legislative requirements for teacher certification.

POSI 2320 (GOVT 2302) Functions of American Government. (3-0) A study of functions performed in the American system of government, both national and state, with special reference to Texas. Prerequisite: POSI 2310 or equivalent.

US 1100 University Seminar. (1-0) University Seminar is an introduction to the nature and aims of university education, with special emphasis on the value of broad learning.
PFW – Students will choose two (2) classes from the area of Physical Fitness and Wellness

II. Mathematics & Science (19 hours)

CHEM 1141 (CHEM 1111) General Chemistry Laboratory I. (0-3) First of two laboratory courses in general chemistry for science-related majors. Course introduces the students to the basics of experimental measurements, including density, separation techniques, formula determinations, titrations, thermodynamics, gas laws, and descriptive chemistry. Prerequisite or Co-requisite: CHEM 1341 or CHEM 1310.

CHEM 1341 (CHEM 1311) General Chemistry I. (3-0) Initial lecture course in general chemistry for science-related majors, covering atomic and molecular structure, bonding, states of matter, solutions, and descriptive chemistry. Concurrent registration in CHEM 1141 is recommended. Prerequisite: Mathematics ACT score of at least 24 (SAT 500 or SAT re-centered 520) or MATH 1315 with a grade of "C" or higher.

MATH 2328 (MATH 2342) Elementary Statistics. (3-0) Algebra-based introduction to descriptive statistics, random sampling, design of experiments, probability and the Central Limit Theorem. Inferential statistics topics include the foundational concepts for confidence intervals and hypothesis testing for simple experiments. Prerequisite: MATH 1315 with a grade of "C" or higher.

MATH 2417 (MATH 2412) Pre-Calculus Mathematics. (3-2) A survey of functions, trigonometry and analytic geometry to prepare students for calculus. Prerequisite: Mathematics ACT score of at least 24 (SAT 500 or SAT re-centered 520) or MATH 1315 with a grade of "C" or higher.

PHYS 1315 & 1115 (Formerly PHYS 1410) (PHYS 1401) General Physics I. (3-2) This course is the first of a two semester sequence which is a survey of the basic laws and principles of physics and includes the topics of mechanics and heat. Emphasis is on solutions to physics problems; a knowledge of algebra and basic trigonometry is essential. PHYS 1410 and 1420 are designed for those students whose program requires technical physics, but who are not pre-engineering students or majors or minors in physics. Prerequisite: MATH 1315 with a grade of "C" or higher. MATH 1317 is recommended.

PHYS 1325 & 1125 (Formerly PHYS 1420) (PHYS 1402) General Physics II. (3-2) This is the second course in a two semester sequence which is a survey of the basic laws and principles of physics and includes the topics of waves, electricity and magnetism, and light. PHYS 1410 and 1420 are designed for those students whose program requires technical physics, but who are not pre-engineering students or majors or minors in physics. Prerequisites: PHYS 1410; MATH 1315 with a grade of "C" or higher. MATH 1317 is recommended.

III. Business & Management (18 hours)

ACC 2301 Accounting in Organizations and Society. (3-0) Introductory accounting course for non-business majors. Describes the role of accounting as an information system essential for the operation of today's organizations. Focus is on (1) how data is captured and processed to provide information for decision-making, and (2) how the information provided can be used for decision-making.

BLAW 2361 (BUSI 2301) Legal Environment of Business. (3-0) A survey of basic features of
the American legal system and legal aspects of business transactions. Topics include the nature and sources of law, court systems and procedures, agency, torts, contracts, ethics, and government regulation of business.

CIS 3317 E-Business. (3-0) Explores the constantly changing world of e-Business from an international perspective. This course will emphasize e-Business challenges and opportunities in the worldwide marketplace, which focusing on global issues of management, implementation and integration of IT resources. Does not count for CIS advanced elective credit. (MC)

ECO 2301 (ECON 1301) Principles of Economics. (3-0) A non-technical study of micro- and macroeconomic principles, including demand and supply, production and cost, market structures, aggregate output and performance of the economy, the business cycle and growth, unemployment and inflation, money and banking, fiscal policy, monetary policy, and international trade and finance. Not for business or economics majors.

MGT 3303 Management of Organizations. (3-0) A study of management functions in modern
organizations, the internal and external environmental factors affecting organizational efficiency, and the application of quantitative and behavioral science to management study.

MKT 3343 Principles of Marketing. (3-0) Study of the strategic marketing process, which creates value for consumers and organizations through integrated production and distribution of products. Examines the marketing process in the context of the global, cultural, economic, legal/regulatory environment. Examines ethical and socially-responsible marketing and the impact of information technology. Prerequisite: Junior standing.

IV. Construction Science (25 hours)

TECH 2160 Introduction to Construction Surveying and Site Layout. (1-1) Common construction surveying and site layout techniques are studied using both optical levels and total stations. Benchmarks, building lines, property lines, differential and profiling are discussed in lecture with applied exercises performed in the laboratory. Prerequisite: Pre-Construction or Instructor's Approval.

TECH 2313 Fundamentals of Architectural Problem-Solving and Design. (2-2) Introduction to the language of architectural design. Use of the computer and CAD software in the design process. Elements of projection theory to include orthographic and perspective projection. Solving complex problems of building geometry. Section views and their relationship to architectural detailing. Emphasis on the successful integration of construction documents.

TECH 2342 Construction Materials and Processes. (3-1) This course will introduce students to various types of construction materials including ceramics, ferrous, non-ferrous, and organic materials used in construction. Their properties, working characteristics, and processes used to manufacture and assemble these materials are studied. Laboratory activities are used to reinforce lecture material. Prerequisite: PHYS 1315/1115 or 1410 or 1430 with a minimum grade of C.

TECH 2344 Power Technology. (2-2) This class deals with understanding the basic laws of thermodynamics. It probes the issues of efficiency and examines energy-converting devices from the inputs, processes, outputs model. Internal combustion engines, electric motors, hydraulic systems, pneumatic systems, wind electric systems, solar energy systems, and gearing systems are reviewed from a practical and a theoretical perspective. Fuel analysis, lubricants, and friction all comprise essential topic areas. Prerequisite: MATH 1315 and PHYS 1315/1115 or 1410 or PHYS 1430.

TECH 2351 Statics and Strength of Materials. (3-0) Course covers principles of statics and strength of materials to include forces, equilibrium, friction, centroids, and stress/strain relationships, axial stress and deformation, thermal stress and deformation, stress concentrations, factor of safety, torsional stress, beam stresses and combined stress. Prerequisite: TECH 2342 or ENGR 2300 and PHYS 1315/1115 or 1410 or 1430 with a minimum grade of C.

TECH 3360 Structural Analysis. (3-0) Structural engineering fundamentals to include design loads, reactions, force systems, functions of a structure, and the analysis of statically determinate and indeterminate structures by classical and modern techniques. Prerequisite: Pre-Construction coursework completed and TECH 2351 with a minimum grade of C or MATH 2471, and TECH 2360.

TECH 3366 Soils and Foundations. (3-0) Properties of subsurface materials and the principles of subsurface construction are studied. Topics include soil classification and testing, soil mechanics and foundation systems, including site layout, excavation, caissons, piles, slurry wall, slab and spread footings. Prerequisite: Pre-Construction coursework completed and TECH 2351 with a minimum grade of C or MATH 2471, TECH 2360 and TECH 2351 or Instructor's Approval.

TECH 3367 Mechanical, Electrical, and Plumbing Systems. (3-1) This course covers typical Mechanical, Electrical and Plumbing (MEPs) systems found in residential and commercial construction along with design and installation methods used to conserve both energy and water in new and remodeled structures. Prerequisites: Pre-Construction coursework completed or MATH 2471 and TECH 2360 or Instructor's Approval.

TECH 4313 Advanced Architectural Design. (2-2) Utilizing Building Information Modeling (BIM) software, architectural CAD techniques and principles of commercial construction. Generating exterior and interior drawings and details; plans, elevations, sections and perspectives. Structural, MEP's, ADA and green building aspects discussed. Design/construction documents produced through group participation projects. Prerequisite: TECH 2313 with a minimum grade of C.

V. Construction (32 hours)

TECH 1260 Introduction to the Construction and Concrete Industry. (2-0) An introductory course for Construction and Concrete Industry Management (CIM) majors. Residential, commercial, heavy, civil and highway construction is explored including the concrete industry. The role of the contractor, architect/engineer and owner are covered including contracts, careers, sustainability and economic importance of the construction industry.

TECH 2360 Residential Construction Systems. (2-2) A residential construction course, which deals with interpreting plans and specifications, along with studying site work, foundations, walls, roofing, ceilings, floor, and finishing systems. Also, residential MEP systems are covered along with applicable building codes and construction financing. Prerequisite: TECH 2342 or ENGR 2300 with a minimum grade of C or Instructor's Approval.

TECH 3361 Commercial Building Construction Systems. (3-0) A commercial building construction systems class that deals with soils, site work, heavy foundations, steel, reinforced concrete, and pre-cast structures along with common assemblies. Commercial MEP's are studied along with CSI master format, as-built and shop drawings, schedule of values, AIA documents, and appropriate building codes. Prerequisite: Pre-Construction coursework completed or MATH 2471 and TECH 2360 or Instructor's Approval.

TECH 3363 Heavy, Civil, and Highway Construction Systems. (3-1) Selection, acquisition, and capabilities of heavy construction equipment are presented. Applications of economics to performance characteristics and production of equipment is discussed. Sector-specific construction management methods are covered, including unit price estimating, equipment fleet design, repetitive scheduling, and major components of highways, bridges, and engineered facilities. Prerequisite: Pre-Construction coursework completed or MATH 2417 and TECH 2360 or Instructor's Approval.

TECH 4360 Construction Contract Administration. (3-3) Student teams solve technical problems related to real-world, construction project typically supplied by an industry sponsor using skills from previous coursework. Typical areas covered are business ethics, proposals, owner contracts, alternate project delivery methods, bid packages, guaranteed maximum price (GMP), site logistics, scheduling and team building. Prerequisite: Pre-Construction coursework or MATH 2471 and TECH 4313, TECH 4361, TECH 4364, TECH 4369 or Instructor's Approval. Recommended TECH 4390.

TECH 4361 Construction Estimating. (2-2) The fundamentals of construction estimating are covered including feasibility, conceptual, square feet, cubic feet, unit in place, preliminary, engineering, range and contractor's detail bid estimates. Plans and specifications are used along with contemporary estimating software to develop estimates commonly used in the construction industry. Prerequisite: Pre-Construction coursework completed or MATH 2471 and TECH 2360 or Instructor's Approval.

TECH 4364 Construction Project Management and Scheduling. (3-1) Concepts of construction management are studied beginning with contract documents through the effective management of manpower, machines, material, and money necessary to complete construction projects on time and within budget. Gantt Charts and PERT/CPM schedules are developed, using contemporary software. Prerequisite: Pre-Construction and TECH 4361, MATH 2471 and TECH 4361 or Instructor's Approval.

TECH 4368 Environmentally Conscious Design and Construction. (3-1) Environmentally sustainable practices used in building design and construction. The LEED system will be used to guide the course, which covers aspects of sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and the CAD design process. Prerequisite: Pre-Construction coursework completed or ID 2329 and TECH 2313 or Instructor's Approval (WI).

TECH 4369 Construction Contracts, Liability and Ethics. (3-0) Legal aspects of design and construction contract documents are presented, including contract formation, interpretation, rights and duties, and changes. Legal liabilities are explored in the context of professional ethics for design firms and constructors. Prerequisite: Pre-Construction coursework completed or MATH 2471 and TECH 2360 or Instructor's Approval.

TECH 4380 Industrial Safety. (3-0) Introduction to the field of industrial safety with emphasis on compliance with Federal and State regulations. Prerequisite: Junior standing. (WI).

TECH 4390 Internship. (0-20) Supervised on-the-job professional learning experience in construction, manufacturing, electronics, and other technical areas. Required by all Industrial and Engineering Technology majors during the summer of their junior or senior year. Prerequisites: Consult internship coordinator. (WI).

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

   Be sure to refer to the "online" 2010/2012 catalog and its addendum for the most accurate information. Note that the 2012/2014 catalog will be published in May 2012.

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

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.

Note: The "Average Enrollment" column numbers are accurate, but in several courses the average enrollment exceeds the number of students in the construction major. This is because:

1) Minors account for an increase in enrollment in specific classes.

2) Other majors in the department are required to take certain construction classes.

3) Interior Design majors are required to take a specific number of Construction classes offered by the Department of Engineering Technology.

Fig. 16 Required Course Offerings

Required Courses		No. of Sections			Average Enrollment
No.	Title	Fall	Spring	Summer	
TECH 2160	Introduction to Construction Surveying and Site Layout	1	1		40
TECH 2313 ①	Fundamentals of Architectural Problem-Solving and Design	3	3	1	24
TECH 2342	Construction Materials and Processes	1	1		60
TECH 2344 ②	Power Technology	1	1		50
TECH 2351	Statics and Strength of Materials	1	1	1	40
TECH 2360 ①	Residential Construction Systems	1	1		60
TECH 3360 ③	Structural Analysis	1		1	15
TECH 3361	Commercial Construction Systems	1			70
TECH 3363	Heavy, Civil and Highway Construction Systems		1		70
TECH 3366 ④	Soils and Foundations		1		10
TECH 3367	Mechanical, Electrical and Plumbing Systems	1	1		70
TECH 4313 ①	Advanced Architectural Design	2	2	1	24
TECH 4360	Construction Contract Administration			1	70
TECH 4361	Construction Estimating	1			72
TECH 4364	Construction Project Management		1		72
TECH 4368	Environmentally Conscious Design and Construction		1	1	55
TECH 4369	Construction Contracts, Liability and Ethics	1			72
TECH 4380 ⑤	Industrial Safety	1	1	1	50
TECH 4390 ⑥	Internship			8	80

① Taken by Concrete Industry Management majors and some Technology minors.
② Taken by all department majors except Concrete Industry Management.
③ Course being phased into program and will eventually be offered twice a year with an average of 40 students.
④ Course being taught for first time during the Spring 2012 semester and will eventually be taught twice a year with an average of 40 students.
⑤ Also required of Engineering Technology and Industrial Technology majors.
⑥ Taken by all departmental majors except Industrial Technology Education majors.

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.**

None. All Construction courses taught are required for Construction majors.

3. **Comments, if any.**

N/A

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

Course No.	Course Title	Other Disciplines Using Course
ENG 1310 & 1320	College Writing I & II	All Campus
ENG LIT	English Literature (one of six choices required)	All Campus
COMM 1310	Fundamentals of Human Communication	All Campus
ART, MU, DAN, TH 2313	Introduction to the Fine Arts (one required)	All Campus
PHIL 1320	Ethics in Society	All Campus
HIST 1310 & 1320	History of the United States to 1877; and History of the United States 1877 to Date	All Campus
POSI 2310 & 2320	Principles and Functions of American Government	All Campus
US 1100	University Seminar	All Campus under 30 hours
PFW	Personal Fitness and Well Being (two 1-hour classes selected from two categories)	All Campus
CHEM 1341 & 1141	General Chemistry I with Lab	Science, Engineering, Engineering Technology
PHYS 1410 & 1420	General Physics I & II	Science, Engineering Technology
MATH 2417	Pre-Calculus	Math, Science, Engineering, Engineering Technology
MATH 2328	Elementary Statistics	Math, Science, Construction
ACC 2301	Accounting in Organizations and Society	Business Minors
BLAW 2361	Legal Environment of Business	Business Minors
CIS 3317	E-Business	Business Minors
ECO 2301	Principles of Economics	General Education option, All Campus and Business Minors
MGT 3303	Management of Organizations	Business Minors
MKT 3343	Principles of Marketing	Business Minors

2. Discuss the adequacy of the courses.

All supporting courses, other than those required by the state or university, offered outside of the department are reviewed on an annual basis along with major courses to assure they are meeting the students' needs, our Construction Advisory Board's recommendations, employer needs and ACCE and SACS requirements.

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 (2011-2012 Academic Year)

Name	FTE	Highest Degree	Age	Years on Staff	Tenured	Tenure Track	Non-Tenure Track	9 Month	12 Month
Full Professor									
Winek	1.00	Ph.D.	60	31	x			x	
Sriraman	.375	D.E.	48	21	x			x	
Assistant									
Lee	1.00	Ph.D.	37	4		x		x	
Talley (Spr 2012)	1.00	Ph.D.	32	0.5		x		x	
Hu	.25	Ph.D.	36	4		x		x	
Gaedicke	.25	Ph.D.	35	3		x		x	
Kim	.25	Ph.D.	43	3		x		x	
Lecturer									
Hager	1.00	Ph.D.	53	14			x	x	
Sharma	1.00	M.S.	35	3			x	x	
Spencer	1.00	M. Arch.	51	1			x	x	

Of the above listed faculty, six are dedicated (100%) to construction. These include Winek, Lee, Talley (joined spring 2012), Hager, Sharma and Spencer. Hu, Kim and Gaedicke are faculty dedicated to the Concrete Industry Management (CIM) program but who customarily teach one CSM course per semester. All three CIM faculty have terminal degrees in Civil Engineering or a very closely related discipline. Gaedicke's concentration in the undergraduate Civil Engineering

program was in Construction Engineering and Management. The three CIM faculty teach courses that are common to both CIM and CM disciplines such as TECH 1260, Introduction to the Construction and Concrete Industry, TECH 2342, Construction Materials and Processes, and TECH 3367, Mechanical Electrical, and Plumbing Systems. Sriraman teaches the TECH 2351 Statics and Strengths of Materials course each fall, spring, and summer, and the TECH 3367 MEP course each fall.

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

Name	% Full Time	Assignment
Andy Batey	100	Department Chair
Carla Collins	100	Administrative Assistant III
Sylvia Salinas	100	Administrative Assistant II
Secretarial Student Assistants (2)	50	Office Student Help
Technical Student Assistants (2)	50	Technical Student Help
Shane Arabie	100	Laboratory Supervisor
Ted Cera	100	Senior Technician
Marcus Ickes	100	Microcomputer Coordinator
Ben Broughton	50	Graduate Research Assistant
Cade Humphries	50	Graduate Instructional Assistant (not GTA)

The above listed staff are not exclusive to the construction program. The staff and percentages indicated are department level commitments. Given the multiplicity of programs that are housed in the Department of Engineering Technology, it would not be possible to furnish construction specific percentages. However, we are confident that the office and technical staff levels in the department meet the needs of the construction program. The two graduate students listed are dedicated exclusively to the construction program. The department enjoys the services of a total of eight GA's (six GIA's and two GRA's) of which these two are dedicated to the construction program. Three of the remaining GA's report to our CIM faculty and an undetermined proportion of their time is spent in service of the construction program.

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.

A full-time work assignment for faculty in the Department of Engineering Technology is comprised of teaching six courses per year (three courses each long semester) combined with appropriate levels of research and/or service. Tenured and tenure-track faculty are expected to engage in research and service. Release

time from the normal full-time teaching load may be granted for research productivity at the discretion of the department chair. Tenure-track faculty and faculty members with outstanding research productivity typically teach four courses per year. Lecturers typically teach six lecture/laboratory courses per year and undertake service activities, but lecturers have no expectation of being research active. The actual percentages of teaching, research and service for each individual faculty member are negotiated at the beginning of each calendar year with the chair of the department. Some variability between the relative percentages assigned to the three areas exists among individual faculty members based upon each particular faculty member's rank and experience, or upon each faculty member's strengths and aptitudes. In regard to tenure-track faculty, the base reference from which individual percentages are established is a 40-40-20 split between the areas of teaching, research and service respectively.

C. Current Faculty Assignments

1. Provide data on faculty assignments for the most recent fall semester or quarter. List all faculty, 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(a) Current Faculty Assignments, Fall 2011

Name	Course	Enrollment	SCH	Other Assignments	
				Time	Activity
Winek	TECH 1260	80	160	50%	Service/Advising
	TECH 2360	23	69	10%	Research
	TECH 5100	7	7		
Hu	TECH 2342	40	120	40%	Research
	CIM 3330	15	45	20%	Service/Advising
Kim	TECH 3361	30	90	40%	Research
	CIM 4210	8	16	20%	Service/Advising
Lee	TECH 4361[1]	37	111	50%	Research
	TECH 5362[1]	5	15	20%	Service/Advising
Gaedicke	CIM 3340	15	45	40%	Research
	CIM 4398	8	24	20%	Service/Advising
Hager	TECH 2313	22	66	25%	Service/Advising
	TECH 4313	48[2]	144		
Sharma	TECH 3360	6	18	25%	Service/Advising
	TECH 4360	28	84		
	TECH 4369	49	147		
Spencer	TECH 2313	46[3]	138	25%	Service/Advising
	TECH 4313	24	72		
Sriraman	None	0	0	Sabbatical Leave in Fall 2011	

[1]TECH 4361/5362 are stacked sections (i.e., two courses taught simultaneously in the same room.)
[2]48 students in two sections of TECH 4313.
[3]46 students in two sections of TECH 2313.

Fig. 21(b) Current Faculty Assignments, Spring 2012

Name	Course	Enrollment[1]	SCH	Other Assignments	
				Time	Activity
Winek	TECH 1260	40	80	50%	Service/Advising
	TECH 2360	30	90	10%	Research
	TECH 5100	2	2		
Hu	TECH 2342	42	126	40%	Research
	CIM 4330	7	21	20%	Service/Advising
Kim	TECH 3367	25	75	40%	Research
	CIM 3366	15	45	20%	Service/Advising
Lee	TECH 3366	12	36	40%	Research
	TECH 4364[2]	33	99	20%	Service/Advising
	TECH 5365[2]	2	6		
Gaedicke	CIM 3420	10	40	40%	Research
	TECH 4380	42	126	20%	Service/Advising
Hager	TECH 2313	24	72	25%	Service/Advising
	TECH 4313[4]	36[3]	108		
	TECH 5313[4]	3	9		
Sharma	TECH 3363	35	105	25%	Service/Advising
	TECH 4360	10	30		
	TECH 4369	15	45		
Spencer	TECH 2313	46[5]	138	25%	Service/Advising
	TECH 4313	22	66		
Sriraman	TECH 2351	51	153	20%	Research
	TECH 5394	7	21	40%	Service/Advising
Talley	TECH 4361[6]	14	42	40%	Research
	TECH 5362[6]	0	0	20%	Service/Advising

[1]Enrollment figures as of end of advanced registration. Actual class sizes will increase somewhat upon late registration.

[2]TECH 4364/5365 are stacked sections (i.e., two courses taught simultaneously in the same room.)

[3]36 students in two sections of TECH 4313.

[4]TECH 4313/5313 are stacked sections (i.e., two courses taught simultaneously in the same room.)

[5]46 students in two sections of TECH 2313.

[6]TECH 4361/5362 are stacked sections (i.e., two courses taught simultaneously in the same room.)

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

Rank	No.	Average of 9 Month Salary	No. of 12 Month Appointments	No. of Resignations in Past 5 Years
Professor	2	$96,249	0	0
Assistant Professor	5	$65,355	0	1
Lecturer	3	$48,191	0	1
Adjunct	1	$2,000 for 1 credit course	0	0

2. Briefly describe the benefits program for the faculty.

The following is a summary of benefits for faculty members at Texas State University-San Marcos:

Retirement

Upon initial employment, all regular employees are automatically enrolled in the Teacher Retirement System (TRS). Full-time faculty have a one-time irrevocable choice within 90 days of eligibility to elect the Optional Retirement Program (ORP) in lieu of TRS. TRS is a defined benefit plan. The employee tax-deferred contribution is 6.4% and Texas State University-San Marcos contributes 6.58% to the system. ORP is a defined contribution plan. The tax-deferred employee contribution is 6.65% and Texas State University-San Marcos contributes 6.58% to the employee's account. Employee and Texas State University-San Marcos both contribute 7.65% to social security.

Group Insurance

Regular, full time employees are automatically covered at no cost for employee-only health coverage and a $5,000 basic life and accidental death and dismemberment policy on the 1st day of employment. Texas State University-San Marcos also contributes 50% of the premium for dependent health coverage.

Worker's Compensation Insurance

University employees are automatically covered by workers' compensation insurance at no cost.

Unemployment Insurance

University employees are automatically covered by unemployment insurance at no cost.

Other

On the first day of employment, the following optional coverages are available at the employee's expense:

- Dental
- Optional life
- Dependent life
- Short and long term disability
- Accidental death and dismemberment
- Long term care

3. Comments, if any.

N/A

E. Evaluation and Promotion Policies

1. Faculty Evaluation

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

At the beginning of each calendar year, faculty submit to the chair a list of personal professional objectives (PPOs) indicating goals to be pursued in each of the three areas of teaching, research and service and the percentage of their total efforts to be allocated to each area. Upon receiving PPOs the chair reviews these and indicates his concurrence with each faculty member's annual goals. Should the chair have reservations about a particular faculty member's annual objectives he will schedule a meeting with that faculty member to negotiate a resolution. Each faculty member also submits a report of accomplishments for the past calendar year, which indicates the degree of success achieved in meeting the previous year's PPOs. This report also documents any additional accomplishments not anticipated the prior January. These annual accomplishment reports are reviewed independently by the chair and personnel committee who then use such reviews to support and justify recommendations concerning merit awards for each faculty member. Again, merit determinations are independently made by the chair and the personnel committee. Should a discrepancy arise between the recommendations of the chair and personnel committee, a meeting is scheduled to resolve these differences. The Dean of the College is the final judge of merit recommendations. Final recommendations are then made by the Dean to the Provost.

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.

No faculty in the program were impacted in the past five years.

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

The policies and procedures relating to the tenure and promotion of faculty are dictated by policy statements that have been set forth at the university, college and departmental level. These policy statements grow more specific and detailed in the progression from university to departmental level. The tenure and promotion review process involves decision making that originates in the department and culminates with the board of regents. The review is a comprehensive assessment of accomplishments centered on the idea of achieving excellence. In particular, performance in the areas of teaching, research and service receive considerable attention. Additionally, a faculty member's departmental citizenship and camaraderie factor into the decision making process. The quality and quantity of a faculty member's research and scholarship is also judged by means of an external review. The external reviewers are typically well recognized construction management (or a very closely related discipline) faculty chosen from major universities around the nation.

F. Professional Development

Discuss institutional and department policies related to:

1. Consulting

Consulting in a professor's area of expertise is strongly encouraged. Consulting activity must be reviewed by the department chair to determine whether such activity might interfere with the departmental duties expected of faculty members. Provided that consulting activities will not unduly hamper a faculty member's ability to perform his/her normal duties, such activities are usually allowed.

2. Professional Associations

Faculty members are strongly encouraged to participate in professional organizations. Participation may include a wide range of activities such as membership, committee assignments, officer positions such as chair, secretary, treasurer, etc., and reviewer or editor for journals. Faculty members also serve on the technical committees of the American Concrete Institute and the Pre-Cast/Pre-Stressed Concrete Institute. Such activity enables faculty members to serve the broader construction community while at the same time enhancing the reputation of the faculty member and the institution. Some of the professional associations with which faculty are involved include:

ACI – American Concrete Institute
AGC – Associated General Contractors
AISC – American Institute of Steel Construction
ASC – Associated Schools of Construction
ASCE – American Society of Civil Engineers
ASEE – American Society for Engineering Education

ASTM – American Society for Testing and Materials
ATMAE – Association of Technology Management and Applied Engineering
NAHB – National Association of Home Builders
PCI – Precast/Pre-Stressed Concrete Institute
USGBC/LEED – U.S. Green Building Council/Leadership in Energy and Environmental Design

3. Publications

See #4 Research.

4. Research

Tenured and tenure-track faculty members are expected to maintain an active research agenda. The most tangible outputs of such research are publications in peer reviewed journals and conference proceedings and external funding to support research. Active research (particularly applied research) provides a means by which academia can support the competitiveness of the US construction industry while at the same time enabling the faculty member to bring the latest in contemporary industrial practices to the classroom. Formal expectations in terms of research productivity are defined in the departmental promotion and tenure document.

5. Continuing Education

All faculty members are strongly encouraged to engage in continuing education as a means of keeping up to date with new and emerging trends in the construction world. Activities include attending seminars, workshops, conferences, presenting and publishing, and reviewing for journals, magazines and funding agencies. Three faculty members are $LEED_{AP}$ certified and three are registered professional engineers (PE). Departmental support is available in the form of funds to cover travel, room and board and registration expenses for professional activities. Additionally, tenured faculty may apply for developmental leave (sabbatical leave) once every six years. Some of the journals for which our faculty serve as reviewers include:

International Journal of Construction Education and Research
American Concrete Institute Materials Journal
Journal of ASTM International
Construction and Building Materials
International Journal of Pavement Research and Technology
Journal of Testing and Evaluation, ASTM

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

Starting in the Fall of 2010, both freshmen and transfer students will enter the "Pre-Construction" curriculum. This curriculum will require all students who wish to pursue the construction degree to complete a designated 30 hours of math, science and selected construction courses, and maintain a minimum GPA of 2.5 (on a 4.0 scale) before they will be allowed to enter the construction major. Also, no "D" grades will be accepted in the above 30 hours and no transfer courses in which a student received a "D" grade will be accepted into the major. For a detailed listing of the Pre-Construction curriculum courses, see Section III. CURRICULUM, Item H. COURSE SEQUENCING.

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

Transfer credits in a construction related discipline taken at another institution are reviewed by the student's major advisor or construction program coordinator as to their appropriateness for the major. The transference of general education courses taken at other Texas institutions is governed by the Texas Common Course Numbering System and are automatically counted toward a student's major, if appropriate. The decision to accept other courses is made on a case-by-case basis and is usually dependent on how closely the catalog description of the transfer course matches that of the required course at Texas State University-San Marcos.

Substitutions are made very sparingly, since the existing construction curriculum has no free electives and was designed in accordance with the spirit of the ACCE accreditation standards. Any substitutions made are done so as not to compromise the essential knowledge base of the construction major.

Advance standing, or credit by examination, where applicable, is accepted by the University. Often, students will take a CLEP test to receive credit by examination for General Education type courses. The department offers no advanced standing credit for any TECH prefix courses, but the department will accept advanced standing for related courses in Management, Math and Physics.

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

History: The construction program began in 1984 and, at that time, enrollment was not an issue. Today the construction program has grown to about 230 majors and during the past three years has seen a 20-30 student per year enrollment increase. Therefore, it became necessary to create a Pre-Construction

curriculum to control both the quality and quantity of students entering the program. This will help ensure both the quality of learning experiences and better manage the quantity of students entering the program.

Pre-Construction curriculum: This curriculum was implemented beginning Fall of 2010 for entering freshmen and transfers. The Pre-Construction curriculum requires the student to take all their math and science courses and four lower-level construction specific courses totaling 30 semester hours prior to enrolling in any advanced construction courses. They also have to maintain a 2.50 GPA and receive no less than a "C" grade in the pre-construction courses. If they meet the above requirements, they are able to enter the construction major.

The enrollment implications of the Pre-Construction curriculum will be carefully monitored to determine if additional future requirements, such as increasing the required GPA or limiting the number of students entering the program based on GPA, will be necessary to continue to ensure the quality of learning experiences.

4. Comments, if any.

N/A

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

Year	SAT Scores 2011/2012		
	Verbal	Math	V & M
New Freshmen	492	548	1,040
Internal Transfers	*	*	*
External Transfers	*	*	*

* SAT scores are not used for admitting these students.

2. Comments, if any.

N/A

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.

Fig. 25 Enrollment

Year	2007	2008	2009	2010	2011
Undergraduates					
Freshmen	29	17	25	24	33
Sophomores	56	80	47	36	46
Juniors	67	72	58	59	53
Seniors	92	99	104	100	80
Total	244	268	234	219	212
Graduate Students					
Masters	0	0	0	0	0
Doctoral	0	0	0	0	0
Total All Students	244	268	234	219	212

* Please note that in the asterisked figures in the table above, students who change from one classification to the next, i.e., from Junior to Senior, are double-counted.

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.

Year	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011
Undergraduates					
Full-time	214	225	213	181	167
Part-Time	30	43	21	38	45
Total Undergraduates	244	268	234	219	212

Full-time enrollment is defined as enrollment in 12 credit hours or more. Part-time enrollment is defined as enrollment in less than 12 credit hours.

3. Comments, if any.

N/A

D. Grading System

1. Briefly describe the institution's grading system.

The institution uses a four (4) point grading system:

A = 4
B = 3
C = 2
D = 1

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

   Currently, students must meet the university's GPA minimum of a 2.0 overall and a 2.25 GPA in the major to graduate. As of the Fall of 2010, no 'D' grades are allowed to be transferred into the construction major from other institutions, and no 'D' grades are accepted in Math, Science or other Pre-Construction courses. Pre-Construction students must maintain a 2.5 GPA in these required 30 hours.

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

   Texas State University-San Marcos has two main methods for recognizing academic excellence. The first method of recognizing academic excellence is by making the "Dean's List." This is accomplished by earning a minimum 3.5 GPA in any semester in which the student completes at least 12 credit hours of course work.

   The second method of recognizing academic excellence is by "Graduating with Honors." Students earning a GPA of 3.40-3.59 will graduate "cum laude"; 3.6-3.79 will graduate "magna cum laude"; and students with a 3.8-4.0 will graduate "summa cum laude."

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

   A student is placed on "Academic Probation" anytime their Texas State University-San Marcos overall GPA falls below a 2.0. At this point they have one semester to raise their GPA above that which they received in the semester they went on probation and two semesters to raise it to a 2.0 or above, otherwise they will be suspended for one semester. If this sequence of events is repeated a second time, and the student is unable to raise his/her GPA above a 2.0 after the second probationary semester, they are suspended for two years.

   Students are automatically reinstated after the end of their mandatory one semester suspension. Students on second suspension must apply for readmission after the two calendar year suspension.

5. **Comments, if any.**

   The university has instituted the "Partners in Academic Student Success" or PASS program for students who are placed on probation. This program is designed to help students plan a course of action to get off probation. Also, all students on probation must meet with their advisor before they can register for their next semester classes.

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 Dean's List *

Year	Fall 2010		Spring 2011		Fall 2011	
	No.	%	No.	%	No.	%
Freshmen	0	0.0%	1	5.6%	4	12.1%
Sophomores	3	8.3%	0	0.0%	3	6.5%
Juniors	2	3.4%	4	6.3%	2	3.8%
Seniors	12	12.0%	6	7.1%	6	7.5%
Total	17	7.8%	11	5.6%	15	7.1%

* Semester GPA of 3.50 or higher based on 12 or more semester credit hours.

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

Fig. 27 Probation Students *

Year	Fall 2010		Spring 2011		Fall 2011	
	No.	%	No.	%	No.	%
Freshmen	7	29.2%	4	22.2%	11	33.3%
Sophomores	10	27.8%	7	22.6%	7	15.2%
Juniors	10	16.9%	8	12.7%	3	5.7%
Seniors	6	6.0%	6	7.1%	3	3.8%
Total	33	15.1%	25	12.8%	24	11.3%

* Probation or suspension at end of indicated semester.

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 *

Year	Fall 2010		Spring 2011		Fall 2011	
	No.	%	No.	%	No.	%
Freshmen	8	33.3%	9	50.0%	7	21.2%
Sophomores	8	22.2%	11	35.5%	3	6.5%
Juniors	6	10.2%	7	11.1%	4	7.5%
Seniors	2	2.0%	7	8.3%	0	0.0%
Total	24	11.0%	34	17.3%	14	6.6%

* Students who did not return or graduate after the indicated semester.

4. Comments, if any.

N/A

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 Construction Unit uses the University's "Degree Audit" electronic student record system to track a student's progress towards his/her degree. Please see Appendix C for a copy of a Degree Audit. This system indicates which courses have been completed, courses in which students are currently enrolled, and courses that remain to be taken along with both the major and overall GPA and Texas State's overall GPA.

The Department and the College of Science and Engineering, maintain files on students enrolled in the construction program. Students are strongly encouraged to meet with either their construction major advisor or their College of Science and Engineering advisor to select courses prior to the beginning of each semester.

Students must indicate their intent to graduate by applying for graduation within the first two weeks of the semester in which they plan to graduate. After the application is made, the College of Science and Engineering will supply the student with a list of remaining graduation requirements. After the College Advising Center has determined that a student has met all graduation requirements, the student's name is added to the graduation list.

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

Both the College of Science and Engineering advisor assigned to construction majors and the construction major advisor have access to the student's electronic files, including their Degree Audit and transcripts, and are trained to use them. Students also have access to their records electronically and can set an appointment with an advisor if they need help interpreting the data.

3. Comments, if any.

N/A

G. Academic Advisement

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

Advising is done by six (6) construction faculty advisors and one full-time College of Science and Engineering Advisor who is assigned responsibility for all Engineering, Engineering Technology (including construction) and Physics majors. Currently, students see advisors as needed. Students on academic probation are required to see an advisor before they can register for classes for the upcoming semester. Additionally, prospective majors and current majors have the option of seeking advice and assistance from the department chair.

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

   Students are assigned a CSM advisor based on the last two digits of their student number. This averages out to be about 50 students per major advisor:

   Dr. Hager - 50
   Dr. Lee - 50
   Mr. Sharma - 50
   Ms. Spencer - 50
   Dr. Talley - 50
   Dr. Winek - 50 (Construction Minors and Construction Engineering Technology students)
   Mr. O'Brien - College of Science and Engineering Advisor

3. **Comments, if any.**

   Students have many advising options. If they have general questions about their degree, they can see Mr. Jason O'Brien, the College of Science and Engineering advisor. He is available by appointment Monday through Friday from 8:00 a.m. to 5:00 p.m. If students have more specific major advising or career related questions, they can set an appointment with or visit a construction major advisor during his/her office hours. Mr. O'Brien's office is located in the same building wherein the construction program is housed.

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 construction program sponsors the Construction Student Association (CSA). Under this umbrella group, students can get involved with the Associated General Contractors (AGC), Associated Builders and Contractors (ABC) and/or the National Association of Homebuilder (NAHB). The CSA is affiliated with the Austin branch of each of these organizations. Membership in CSA costs $20/year, which covers the cost of the six (6) meetings held each year, homecoming Alumni Tailgate Party and other expenses. CSA has a membership of about 80 students and typically sponsors the following events each year:

   - Six (6) yearly meetings
   - Homecoming Alumni Tailgate Party
   - October and February Construction and Concrete Job Fairs
   - OSHA, 10-hour Construction Safety Course
   - Spring Golf Tournament and Fund Raiser
   - Community Service Projects

   CSA works closely with the American Concrete Institute (ACI) student chapter, often holding joint events. The purpose of the organization is to get students

involved in life-long learning, networking with construction companies and professional organizations along with developing relationships with other construction students.

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.

Faculty Evaluation

Every course and faculty member is evaluated using the 31 question "Department of Engineering Technology, Texas State University-San Marcos, Faculty/Class Evaluation" form (Appendix J: Faculty/Classroom Evaluation). This evaluation form asks questions under the headings of: Learning; Enthusiasm; Organization; Individual Rapport; Examinations; Assignments; and Student and Course Characteristics. This evaluation is electronically scored. Each instructor's arithmetic mean and standard deviation on the 31 questions are made available to both the instructor and department chair.

A second evaluation form, entitled "Survey Form: Student Reaction to Instruction and Course" (Appendix K: "Student Reaction to Instruction and Course"), consists of six open ended, short answer questions in which students are asked to evaluate the course. Administration of this form is mandatory for non-tenured, and tenured track faculty and optional for tenured faculty. These two forms are used to review a faculty member's performance in the classroom and the information gleaned is then used to make improvements in the courses he/she teaches.

Course Learning Outcomes Assessment

Course learning outcomes are evaluated by both subjective and objective methodologies. The subjective method asks students to evaluate how well they believe they have mastered the "Learning Outcomes" for the course, using an eight (8) point Likert Scale ranging from *"Very Strongly Disagree"* to *"Very Strongly Agree"*. The objective method calculates individual performances as well as a class average on each of the relevant "Learning Outcomes" based on a variety of objective measurements, including embedded test questions, laboratory assignments, team projects and presentations, etc. Because both the specific "Learning Outcomes" and the general classroom approach of the several classes can vary from course to course, the specific kinds of objective measurements also vary from course to course.

The results from both the subjective and objective methods are averaged each semester and recorded in each course's "Instructors Course Assessment and Improvement Plan" found in each course notebook behind the "Course Assessment" tab. Along with both semester-specific averages, a running, historic average is also computed for every course. The semester-specific averages for both methods are compared to the historic average every semester, in order to examine any observable trends in learning success.

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

The CSA student chapter is involved typically in two campus-wide activities per year. The first is the alumni/student tailgate party held in the parking lot of the stadium during Homecoming. This event is in October and gives alumni, employers and students an opportunity to mix in a social setting. Typically, over 200 participants attend this event, during which the annual washer tournament is held and 100 pounds of brisket is smoked on the CSA smoker.

The second event in which CSA is involved is "Bobcat Build." This is an annual event sponsored in the Spring of each year, where students university-wide perform community service. Since the construction students have skills not possessed by other majors, they have been involved in building handicap ramps, performing house repairs and in the improvement of a local community playground. Also, several service activities have been done at Allenwood Apartments, a housing community for low income families.

4. **Comments, if any.**

Construction students often get involved with community construction projects which can include help in the construction of Habitat for Humanity homes built in San Marcos. This organization, on which Dr. Winek has served as a board member, builds about one home per year.

I. Graduates and Placement Data

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

Fig. 29 Number of Graduates by Fiscal Year

Year	2007	2008	2009	2010	2011
Associate	0	0	0	0	0
Baccalaureate	43	40	65	56	62
Masters	0	0	0	0	0
Doctorate	0	0	0	0	0

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

Fig. 30 Placement Data (2010/2011 Academic Year)

Type of Employer	No. Graduates
Construction related employment	1
Construction or construction management firm	43
Material or equipment supplier	2
Owner (utility, R.R., etc.)	
Design or development	1
Other	
Continuing education	
Other	
Non-Construction employment	1
Seeking employment	
No information	17
Total	**65**

3. **The average annual salary for the above graduates is** $55,909.
   This information was based on the 2011 "Alumni Survey Results (Graduating Seniors). It should also be noted that construction majors salaries were ranked 8th out of the 40 department/schools on campus.

4. **Describe the design of alumni tracking objectives, documents and procedures.**

   The Construction Alumni Survey (Appendix P), in contrast to the Alumni Survey Results (Graduating Seniors) (Appendix D), which is completed upon graduation, is intended to seek graduated students' opinions after they have had some work experience (1-3 years) and therefore an industrial perspective. The survey determines the following:

   - Other advanced degrees or certifications pursued after graduation
   - Affiliation with professional construction societies
   - Job history (position, salary, etc.)
   - Nature of their positions and the implications for the following:
     - Skills or knowledge that would help future graduates be more effective after graduation
     - Suggested improvements to the construction curriculum

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

   The construction alumni survey instrument is included in Appendix P. An analysis of the most recent survey done in 2009 revealed the following:

   The alumni are in appropriate construction positions and at appropriate salary levels for those positions. The areas of Commercial Construction, the RFI process, Contracts, CAD and MEP Systems were cited as areas that should be expanded in their education or would help them be more effective on the job. Alumni also indicated that they were well satisfied with their choice of

construction as an undergraduate major. It should be noted that all these concerns were addressed in the new BS in Construction Science and Management Degree, which went into effect during the Fall 2010 semester. The next alumni survey is to be conducted during the summer of 2012, which will indicate the progress that has been made to address these concerns.

It should be noted that these comments were made by students who graduated under the now deleted degree titled "Bachelor of Science in Technology with a major in Industrial Technology – Construction Technology". This degree was replaced by the Bachelor of Science in Construction Science and Management (CSM) in the Fall of 2010. This new degree addressed many of the areas cited for improvement. The new CSM degree includes the following courses intended to address these concerns: "Construction Contracts, Liability, and Ethics" (TECH 4369), "Mechanical, Electrical and Plumbing Systems" (TECH 3367) and "Advanced Architectural Design" (TECH 4313), which includes Building Information Systems Modeling (BIM) and is the second CAD class following Fundamentals of Architectural Problem-Solving and Design (TECH 2313). In relation to Alumni comments on preparedness, the TECH 4360 class "Construction Contract Administration" has been completely revised to include writing a proposal based on a real owner's project. During the Fall 2011 semester, Turner Construction sponsored the class and students were asked to write a proposal for replacing all air handlers for the Bexar County Jail in San Antonio. Representatives from both Turner and Bexar County evaluated each team's proposal. In addition, at the suggestion of our CAB, plans are under way to lengthen the TECH 4390 Internship from the current 23 days and 184 hours to 10 weeks and 400 hours minimum.

J. Other

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

There are four departmental scholarships specifically available for construction majors and three general departmental scholarships available to all Engineering Technology students.

Construction Specific Scholarships:	**Yield***	**Endowment**
1. K-W Construction Technology Scholarship	$ 900.00	$46,571
2. Texas Capital Builders Association Scholarship	$ 0	$10,150*
3. Joseph E. Winek Construction Scholarship	$1,300.00	$41,092
4. Ron W. Mostyn Scholarship in Construction Science and Management	$ 0	$24,500*

* Note: Endowed scholarships must reach the "Presidential" level of $25,000 before a scholarship can be given from the endowment. It is hoped the endowment will grow by 5% per year with 4% used for scholarships and 1% returned to the endowment.

General Departmental Scholarships:

1. William L. Deck Scholarship	$ 700	$ 25,000
2. Bruce and Gloria Ingram's Engineering Technology Scholarship	$ 0	$400,000*
3. Dr. Joe Walker Technology Scholarship	$1,100	$ 28,312

* Note: This endowed scholarship was established during the Spring 2012 semester.

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.

Fig. 31 Laboratories

Building	Room No.	Laboratory Name	Description	Approx. Area	Courses
R.F. Mitte	1240	General CAD	Mechanical and Architectural Design	1980	TECH 2313 TECH 4313
R.F. Mitte	1220	Material Testing	General Material Testing	800	TECH 2342
R.F. Mitte	1225D	Soils and Asphalt	Soil and Asphalt Testing	988	TECH 3366
R.F. Mitte	1225D	Research	Research	350	TECH 2342
R.F. Mitte	1225	Construction	Construction	1500	TECH 2360 TECH 3361
R.F. Mitte	1225 & 1225A.2	Concrete Testing	Concrete Testing	2500	TECH 2342 TECH 3361
R.F. Mitte	1223	Fabrication and Assembly	Welding and Joining	1911	TECH 1330
R.F. Mitte	1210	Repair	Repair and Maintenance	1273	N/A
R.F. Mitte	4236	Construction CAD	Architectural Design	1488	TECH 2313 TECH 4313
R.F. Mitte	4233/ 4227	Construction and Concrete Studio/Classroom	General Classroom Capstone Course Estimating Room	1584	TECH 4360 TECH 4361 TECH 4364
R.F. Mitte	4227	MEP	Mechanical, Electrical and Plumbing Systems	624	TECH 3367

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

All laboratories listed above are primarily controlled by the Department of Engineering Technology. The general CAD, Material Testing, Fabrication and Assembly laboratories are shared with the Ingram School of Engineering, but the department maintains first-call prerogative in scheduling these labs. The other laboratories are almost exclusively used by the Department of Engineering Technology. In case of an overflow, the computer laboratory located on the fifth floor of the R.F. Mitte building and under the control of the Ingram School of Engineering is available for use by the construction program. A healthy reciprocity in terms of sharing spaces exists in the College of Science and Engineering.

4. Comments, if any.

The department began offering classes in the R.F. Mitte building in 2003. Prior to that date all department programs, including the construction program, were housed in six smaller buildings, three of which dated from the 1950's and two additional from the 1970's. One was a pre-fabricated metal building. The department and our academic programs are fortunate to be housed today in a modern building which provides upwards of 24 state-of-the-art teaching laboratories. Figure 31 above lists those labs serving primarily the construction program, but there are many more laboratories in the Mitte building making it one of the most contemporary and technically sophisticated on campus.

B. Classrooms

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

Fig. 32 Classrooms

Bldg.	Room No.	Approx. Area	Capacity	Furnishing	Environmental Problems
R.F. Mitte	3224	2000	100	Tablet/Arm Chair	None
R.F. Mitte	3241	2000	100	Tablet/Arm Chair	None
R.F. Mitte	4234	1156	40	Tablet/Arm Chair	None
R.F. Mitte	4231	1326	50	Tables/Arm Chair	None
R.F. Mitte	4233	1584	40	Tables & Chairs	None

Additional classrooms are available on the fifth floor of the R.F. Mitte building and in the neighboring Supple Science building.

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

All of the classrooms listed are controlled by the Department of Engineering Technology. Engineering Technology thus has first call privilege for class scheduling purposes. Once the department has made its class assignments, the university can schedule other classes in the rooms during unscheduled times.

3. Comments, if any.

The two 100-seat classrooms on the 3rd floor, RFM 3224 and 3241, permit the scheduling of lower-level and non-laboratory courses where throughput demands are high, while the mid-size rooms on the 4th floor, RFM 4231, 4233, and 4234 are more suited to upper-division courses and lab-based classes where throughout demand is less and a smaller class size would be more appropriate.

C. Staff Offices

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

Fig. 33 Staff Offices

Building	Room No.	Approximate Area	Title	Occupant
R.F. Mitte	2213	100 sq. ft.	Assistant Professor	Lee
R.F. Mitte	2240 D	270 sq. ft.	Professor & Construction Coordinator	Winek
R.F. Mitte	2221	110 sq. ft.	Senior Lecturer	Hager
R.F. Mitte	4215	110 sq. ft.	Senior Lecturer	Sharma
R.F. Mitte	4242	120 sq. ft.	Senior Lecturer	Spencer
R.F. Mitte	4245	110 sq. ft.	Assistant Professor	Talley

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

   The faculty offices are located on the second and fourth floors of the R.F. Mitte building. All of the construction laboratories, classrooms, secretarial services and computing facilities are located in the same building. The library is conveniently located within 1,000 ft. from the R.F. Mitte building.

3. **Comments, if any.**

   All faculty offices, administrative and technical support services, as well as the department chair's office, classrooms and laboratories are conveniently located on the first through fourth floors of the Mitte building. This promotes ease of communication and coordination among the faculty, administrative and technical support staff, and the department chair. It also promotes a sense of community and fraternity among the faculty, support staff, and students.

D. Library

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

   Books and periodicals may be obtained by the construction unit primarily from our holdings in this area in the Alkek Library. Alkek Library serves the entire university community. Thus, not only learning materials in construction but also materials in related areas such as science, engineering, and business would be available at this facility. The Alkek Library also participates in the Inter Library Loan (ILL) process. Faculty and students can request materials through the ILL process. Additionally, our university participates in TEXShare, a library resource-sharing program between all public institutions of learning in the State of Texas. A total of 25 research databases in the library cater to the needs of the Department of Engineering Technology. The library subscribes to a total of 106 periodicals and journals in the areas of building construction and architecture.

Currently, most of these periodicals and journals are available electronically at the library as the library moves from print to an electronic format. Lastly, the library subscribes to approximately 200,000 electronic books/e-texts in many subjects.

Fig. 34 Library Holdings

Category	Books
Building Construction	1606
Architecture	4187
Technology, General	3773
Engineering, General, Civil	4191
Highway Engineering	91
Bridge Engineering	70
Mechanical Engineering	2075
Electrical Engineering, Nuclear Engineering	8384

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

   These materials are located in the Alkek Library as described above, with the Catalog available online and many journals and periodicals now available electronically.

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 of Engineering Technology has an annual library budget of about $80,015 for the 2011/2012 academic year. This amount is available on an annual basis to order new books and continue subscriptions to periodicals. Of this amount $58,003 was spent on periodicals and about $22,000 on books and other materials. Faculty in the department provide itemized requests for the books and periodicals they would like to procure to our library representative, Dr. Gary Winek. Dr. Winek serves as a clearinghouse and processes requests in an equitable fashion for all programs in the department.

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

   The following construction courses make extensive use of library materials that are kept in the reserve section for consultation by students towards the completion of projects and other assigned activity. Typically, these materials tend to be very expensive and/or extensive in scope, which would render them prohibitive from a student purchasing standpoint. Examples of such materials include the RSMeans Square Foot Costs manual and the Occupational Safety and Health Standards for Construction manual. Other construction courses use the general library collection for doing construction related research for writing papers. Some courses that make use of these materials include:

TECH 1260 Introduction to the Construction and Concrete Industry

- General Library Collection for writing a paper on significant Construction Project
- Publication Manual of the American Psychological Association-Style Manual used to format papers

TECH 2360 Residential Construction Systems

- International Residential Codes
- 2012 RSMeans Square Foot Estimator-Reference required to complete class assignments

TECH 2342 Construction Materials and Processes

- ASTM standards for lab exercises

TECH 3366 Soils and Foundation

- ASTM Standards required to conduct laboratory activities

TECH 4313 Advanced Architectural Design

- General Library Collection – for researching Building Information Modeling topics. A summary paper is written.
- International Building Codes – on reserve for reference use in the semester project.

TECH 4361 Construction Estimating

- 2012 RSMeans Building Cost Data

E. Audiovisual Services

1. Describe the audiovisual services of the institution.

The University has equipped classrooms across campus with an instructor's computer (which is internet connected), computer projector, Elmo system and DVD players. These AV systems are installed and maintained by the central media services department on campus, the Instructional Technologies Assistance Center (ITAC).

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

All of the construction courses are taught in classrooms that have the above mentioned AV equipment. Faculty teaching courses typically use this equipment for instruction. Additionally, almost all faculty use TRACS, which is an online course management software for communicating with students, broadcasting course materials and managing of grades, etc. The department employs a full-time Computer Lab Technician who provides maintenance, software upgrades, and training and support on this equipment.

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

The construction faculty has adopted an experiential approach to learning. Thus, visual aids are featured prominently in the classroom. In addition to specific design, estimating and scheduling software applications, which are loaded on the Instructor's Stations, MS PowerPoint is used to facilitate classroom instruction. Instructors also bring physical models to the classroom. Smaller objects and models can be projected onto the projection screen using the Elmo system. It is also not uncommon for the classes to adjourn to the laboratory to watch or participate in physical demonstrations of construction equipment and processes. Field trips to actual construction sites are also common place.

F. Computer Facilities

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

All students receive a user account and email ID upon registering. This enables the students to use one of several centralized computing facilities such as those in the Alkek Library and the Collaborative Learning Center (CLC). At these centers students can access internet, send and receive email and use general purpose software such as MS Office. Also, most departments have one or more general computer labs that can be used by all Texas State students when these labs are not being used for teaching classes.

2. Describe the computer facilities of the construction unit.

The department has two CAD specific laboratories (Rooms 1240 and 4236) in the R.F. Mitte building that students can also use for general purposes and for completing construction related assigned work. The construction unit also has available their first call lecture/computer lab specifically designed for teaching construction courses (Room 4233) and the associated estimating/project management/capstone/MEP lab (Room 4227). The departmental Microcomputer Lab Technician assists with any technical issues that faculty and students may have. Faculty receives a new computer upon joining Texas State University-San Marcos. This computer is replaced about every three years per the provisions of a planned replacement policy.

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

Computers are an integral part of the construction curriculum. Students get introduced to MS Office applications such as Word, Excel and PowerPoint. The Architectural Design courses expose students to CAD software such as AutoCAD and Revit. The courses in Project Planning, Estimating and Scheduling expose students to software such as National Construction Estimator, Primavera, Microsoft Project, WinEst and On Center, as examples.

G. Placement Services

1. Describe the institutional placement services.

Texas State University-San Marcos has an Office of Career Services with multiple staff members and a Director. Career Services hosts multiple general purpose job fairs that cater to the needs of most majors on campus. Career Services also provides resume writing and interviewing skills related services to students. Owing to the high demand for our construction majors from the industry, the Department of Engineering Technology in conjunction with Career Services hosts two "Construction and Concrete Industry Job Fairs" each year, usually in October and February. Our majors secure outstanding summer jobs, internships and full-time job offers at these fairs. These twice annual career fairs have proven to be a win-win for both our students and the industry.

2. List the companies that utilized the institutional placement service during the past year that requested interviews with graduates of the construction program.

Below is a sample of companies that attended our Construction and Concrete Industry Job Fair in the past and who make these arrangements through Career Services:

Archer Western Contractors, Ltd.
ASCO
Austin Commercial
Bartlett Cocke General Contractors
Byrne Construction Services
Centex Homes
Durotech LP
Flintco, Inc.
Fluor Corporation
Hensel Phelps Construction Co.
Highland Homes
J.R. Butler, Inc.
Kiewit Offshore Services
Landmark Structures
McCarthy Building Companies, Inc.
Morganti Texas, Inc.
Performance Contracting Group
Rogers – O'Brien Construction
SpawGlass Contracting, Inc.
TD Industries
The Whiting-Turner Contracting Company
Transwestern
Vaughn Industries
WG Yates & Sons Construction
Zachry Construction Corporation

3. Comments, if any.

During the height of the construction boom in 2008, we filled the LBJ Student Center Ballroom with 30 contractors, which was the maximum this facility could hold. Then, participation began to decline coincident with a slowing of the national economy. During the February 2011 Job Fair, however, 19 contractors attended the event, and these participants are now expressing more optimism about the near-term future of the industry.

VII. RELATIONS WITH INDUSTRY

A. Advisory Committee

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

Dr./ Mr./Ms.	First Name	Last Name	Company	Title	Category
Mr.	John	Dunn	Brandt Engineering	V.P. Business Development	Subcontractor
Mr.	Cisco	Hobbs	Rogers-Obrien Construction	Director of Preconstruction	Commercial
Dr.	Earl	Ingram	Ingram Readymix, Inc.	President	Supplier
Mr.	William	Norton	Project Control	Senior Project Manager	Project Management
Mr.	Randy	Pawelek	Bartlett-Cocke	President	Commercial
Mr.	Chris	Peck	McCarthy	Vice President-Business & Development	Commercial
Mr.	David	Stayshich	Fluor Daniel	Corporate Construction Engineering Manager	Commercial
Mr.	Ryan	Stewart	Turner Construction	Manager	Commercial
Mr.	Joel	Stone	SpawGlass	Chief Executive Officer	Commercial
Mr.	Ken	Trainer	Chesmar Homes	President	Residential
Mr.	Michael	Vickery	Baker Triangle	Senior Vice President	Subcontractor

2. Describe advisory committee procedures.

The Construction Advisory Board meets two times a year with the construction faculty. The meetings are generally held in October and February, and are scheduled the day before the Fall and Spring Construction and Concrete Job Fairs. This scheduling method allows advisory board members, who travel considerable distance, to attend the advisory board meeting, stay overnight and participate in the construction job fair the next day. These meetings start at 10:00 a.m. and end at 2:00 p.m. Each regular meeting of the CAB includes an executive session which provides the board a chance to discuss items of interest outside the presence of the faculty.

There is a $1,000 annual membership fee for board members. This money is initially placed in the Construction Technology Discretionary Account and can

be moved to different accounts as the Board and Faculty see fit. The advisory board follows the procedures set forth in the "Construction Advisory Board Bylaws," which were approved during the 2007/08 school year.

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

The advisory board has assisted the construction program in the following major ways:

1) Provided financial support
2) Provided curriculum and program input
3) Provided industry speakers for both classroom presentations and for the CSA student chapter meetings
4) Participated in the Fall and Spring job fairs
5) Provided internships for construction students
6) Provide employment to graduates upon graduation
7) Offered advice and counsel regarding our pursuit of ACCE accreditation

The advisory board has continued to increase its role in providing input to the program. This occurred as board membership grew and became more stable. The role of the advisory board was clarified through the creation of the bylaws, which were approved during the 2007/08 school year.

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.

Fig. 35 Total Contributions

	Previous Year		Five Year Total	
	No.	**Amount**	**No.**	**Amount**
Construction Association				
Contractors	10	$10,000	18	$77,542 ①
Alumni				
Faculty	2	$600	2	$1,200
Individuals	1	$5,000	15	$34,500 ②
Other *	1	$2,800	2	$ 11,700 ③
Totals	14	$17,900	37	$123,942

① This total is composed of $18,022 from the Discretionary Account and $59,520 from the Excellence Endowment. Most of this money was accumulated through CAB memberships and two large donations from SpawGlass and Bartlett Cocke.

② Note that $24,500 of this amount was donated by Mr. Ron Mosytn to establish an Endowed Scholarship.

③ A major portion of this money comes from the Job Fair. Employers pay $200 to attend, with $100 being returned to the department's discretionary account.

Note: Not included in the above chart are the:

- $1,000 - $7,500 surplus from the Spring Employer/CSA Golf Tournament
- $7,500 from the distribution of the "Student Directory" of which $2,000 is used for CSA chapter activities, $1,000 is used for Society of Manufacturing Engineers (SME) chapter activities, and $4,500 for Endowed Scholarships

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

- Cement
- Aggregate
- Concrete Chemical Additives

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 chairmen, group leaders, lecturers, etc.

Fig. 36 Seminars and Short Courses

Dates	Description	No. of Participants	Faculty Participants
10/25-27/2010 & 11/1-3/2010	OSHA	30	Winek-group leader
3/9-10/2012	OSHA	13	Sharma-group leader

2. Comments, if any.

Currently most of the Construction faculty are in the early years of their careers, with the departmental focus on helping them to succeed in the tenure and promotion process. Two Senior Lecturers are pursuing terminal degrees. The department hopes to see these individuals complete their Ph.D. degrees so they can potentially move into a tenure track position. Therefore, our focus has not been on presenting seminars or short courses for the industry except when required by grant activities.

For example, Dr. Lee, who is in his fourth year in a tenure track position, along with Dr. Winek and others, wrote a TxDOT grant to determine when it is economically feasible to convert surfaced roads to gravel roads in low average daily traffic (ADT) conditions. Upon completion of this study, several presentations are required to be made to TxDOT and other interested parties.

In the future, as our younger faculty establish areas of expertise, there will be an increased effort to provide industry with relevant seminars and short courses.

D. Research

1. Indicate research, both sponsored and unsponsored, 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

Dates	Description	Sponsor	Amount ($)	Major Investigator
External Grants				
2011/2012	Cost Associated with Conversion of Surfaced Roads to Un-surfaced Roads	TXDOT	$118,112	Lee, Hu, Kim & Winek
2011/2012	Synthesis on Cost Effectiveness of Extradosed Bridges	TXDOT	$49,995	Hu & Lee
2011/2012	Review of Quality System Manual (QSM) for Precast/Pre-Stressed Concrete: PCI Level II	Pittsburg Flexicore	$6,000	Kim & Lee
2010/2011	Synthesis of Microsurfacing Success and Failures	TXDOT	$49,931	Lee, Hu, Gaedicke & Kim
2009/2010	Evaluation, prevention and Repair of Microbial Acid-Produced Attack on Concrete	TXDOT	$252,557	Hu & Lee
Internal Grants				
2012/2013	Quantification of Warm Mix Asphalt Aging Using HP-GPC	Tx State	$8,000	Lee
2010/2011	Performance Properties and Prediction Models of Low-Energy and Low Carbon-Dioxide Polymerized Binders	Tx State	$8,000	Lee
2009/2010	Evaluation of Eco-Friendly Polymer Modified Asphalt in Rheology	Tx State	$8,000	Lee

2. Comments, if any.

The construction program expects to continue increasing its research output through external grants and contracts. The university was recently re-classified by the Texas Higher Education Coordinating Board as an Emerging Research Institution. This re-designation will enhance the ability of our faculty to seek external grants and contract funding. New faculty hires, such as Drs. Lee and Talley have both received start-up packages, with Dr. Lee receiving $100,000 and Dr. Talley $87,614. Such start-up packages are provided by the university

to new faculty for the purpose of purchasing equipment and meeting other financial needs associated with the initiation of a research program. New faculty hires are also afforded a reduced teaching load during their first year on the faculty in order that they might devote quality time to the establishment of a research program.

The university also committed over $250,000 to remodel the construction lab and purchase equipment for construction materials research. This investment should yield more research, grants and contracts as faculty now have a state-of-the-art facility with state-of-the-art equipment necessary to conduct leading edge research on construction materials.

Please note that Dr. Soon Jae Lee (tenure track) is in his fourth year and has established a very active research agenda in the area of transportation and pavement materials. Dr. Kimberly Talley (tenure track) is in her first semester (Spring 2012), but is in the process of establishing a research track in Science, Technology, Engineering and Math (STEM) education. We have two senior lecturers pursuing their Ph.D.'s. Mr. Vivek Sharma is pursuing a Ph.D. at the University of Texas – Austin in Civil Engineering and Ms. B. J. Spencer is pursuing a Ph.D. in the College of Education at Texas State to complement her Masters in Architecture. We fully expect that both will be actively establishing their research agendas as they progress through their degree programs. Dr. Winek is the only tenured faculty member on the Construction Faculty. He plays an active role in administering the program, including overseeing needed curriculum changes, organizing and conducting of the CAB meetings, working with Career Services to run both the fall and spring Construction and Concrete Job Fairs, along with coordinating the ACCE Accreditation process. He also schedules and conducts needed CSM faculty meetings and works with younger faculty in the areas of Teaching, Research and Construction Service.

E. Work Experience Programs

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

Prior to 2008, construction students were required to take six (6) credit hours of internship (TECH 4390). This requirement was lowered to three (3) credit hours for students entering the program under the 2008 catalog, as a result of semester-hour limits placed upon institutions of higher education by the state legislature. The contact hour requirements and five-week duration of the course, however, were kept the same. At the suggestion of our CAB, plans are under way to lengthen the TECH 4390 Internship from the current 23 days and 184 hours to 10 weeks and 400 hours minimum. This program is offered in the summer to students who have completed at least seventy-five (75) hours towards their degree. Additional pre-requirements for the internship include:

- Completing all Math courses
- Completing all Science courses
- Completing at least 12 credit hours from the construction major
- Earning a 2.0 overall GPA

- Earning a 2.25 major GPA
- Completing two semesters on campus

Students attend both a fall and spring internship meeting prior to serving an internship. During these meetings, they are informed about the internship requirements. They also complete all necessary paperwork which is reviewed by faculty before final internship approval is given.

The department had 55 students across all majors serving internships during the Summer of 2011. Of these students, 38 were construction majors. Below is a chart indicating the companies and locations where students served their internships. Construction majors have been identified with an asterisk:

2011 Construction Student Internship				
	Company Name	**Location**	**Student Name**	**Summer Session**
1	Teeple Partners, Inc.	Austin, TX	Arrendondo, Justin *	I
2	Hensel Phelps Construction Co.	Houston, TX	Biskamp, Daniel *	I
3	Holloman Corp.	Converse, TX	Bradley, Sean *	II
4	Shaw Pipeline Services	Houston, TX	Byrne, Jordan	II
5	Walton Signage	San Antonio, TX	Carneiro, Matthew	I
6	Supply Chain Services Int'l - Caterpillar TPS	Seguin, TX	Carson, Ellen	I
7	Texas Lehigh Cement Co.	Buda, TX	Carter, Charles	I
8	Meritage Homes	Austin, TX	Creany-Scott, Caleb *	I
9	Hard Rock Utility Contractors	San Antonio, TX	Daly, Wil *	I
10	Meyer GC, Inc.	Goshen, KY	Darling, Merritt *	I
11	Meritage Homes	Austin, TX	Darr, Chris *	I
12	The Loftcrafters, Inc.	Irvine, CA	Dominguez, Stephen *	I
13	Meritage Homes	Austin, TX	Gambill, Paul *	I
14	Meritage Homes	Austin, TX	Gearhart, Todd *	I
15	Hunter Industries	San Marcos, TX	Gilliam, John *	II
16	W G Yates Construction	San Antonio, TX	Glasgow, Calvin *	I
17	Bailey Elliot Construction, Inc.	Austin, TX	Hakim, Bryan *	I
18	LC Architects	Alcobendas, Madrid, Spain	Hall, Russell *	I
19	Circle H Mfg LLC	Bryan, TX	Haverland, Jacob	I
20	Monument Café Group LLC	Georgetown, TX	Hrncir, Stratton	II
21	MJC & Associates GC	San Antonio, TX	Hubbert, Cody *	I
22	Dausin Electric Company	Selma, TX	Janak, Justin *	I & II
23	Spansion, Inc.	Austin, TX	LaSalle, Erling	I
24	Jimmy Jacobs Custom Homes	Georgetown, TX	Loftin, Jacob *	I
25	McCarthy Building Companies, Inc.	Dallas, TX	Mancia, Frank *	I
26	Phoenix Commercial Construction	Spring, TX	Mannion, Jeff *	I
27	Keystone Concrete	Schertz, TX	Mouser, Travis	I
28	RSM Lighting & Electrical	Round Rock, TX	Neel, Ryan	I
29	Spaw Glass		Nitschke, James *	II
30	W.G. Yates Construction	San Antonio, TX	O'Connor, Patrick	II
31	SPA Skateparks	Austin, TX	Oeffinger, Josh *	I
32	Hyperion International Technologies	Austin, TX	Orozco, Leticia	I
33	Caterpillar TPS	Seguin, TX	Ramos, Roberto	I
34	Thermon	San Marcos, TX	Rice, Brian *	I
35	Luna Homes	Amarillo, TX	Robinson, John *	I

36	Prime Form Building Systems	San Antonio, TX	Ropshaw, Chase *	II
37	Aquilex Hydrochem Mfg	Deer Park, TX	Sandel, Travis	I
38	Gillette Building Group LLC	Austin, TX	Shulze, Cody *	I
39	Danze Concrete, Inc.	Round Rock, TX	Smith, Grant *	I
40	Barron Construction	Fort Worth, TX	Smith, William *	I
41	Zachry Construction Corp.	Buda, TX	Stein, Travis *	I
42	Basic Industries, Ltd.	Schertz, TX	Swedlund, Leif	I
43	Ingram Readymix	New Braunfels, TX	Taylor, Griffin	I
44	Journeyman Construction	Austin, TX	Tebbe, Kyle *	II
45	Integrity First Home Improvements	Buda, TX	Tipton, Glen *	I
46	Michael Deane Homes, Inc.	Austin, TX	Tufts, David *	I & II
47	Meritage Homes	Austin, TX	Urbonavicius, Gintautas *	I
48	NM Contracting	McAllen, TX	Villanueva, David *	I
48	Crossland Construction Co., Inc.	Columbus, KS	Whitehead, Dean *	
50	Denison Industries		Williams, Alexandria	II
51	Midland Mfg Co.	Fort Worth, TX	Wirsing, Guy	I
52	Woosley Construction, LLC	New Braunfels,TX	Woolsey, Leon *	I
53	Big B Concrete	San Antonio, TX	Yaws, Richard *	I
54	Floyd's Glass Company	Taylor, TX	Zuehlke, Kevin *	I
55	Pepper-Lawn Construction LP	Cedar Park, TX	Zupan, John *	I

2. Describe the Summer job program. Indicate the number of students and companies involved during the past year.

See E.1. above for details concerning the internship program. Students are encouraged to find summer jobs in the construction industry before serving their internship, but no formal summer job program is offered through the department. Our CAB has suggested that we initiate a summer job program for freshmen and sophomores, and informal conversations are on-going between ourselves and the CAB regarding the establishment of such a program. In contrast with the existing internship program, no formal supervision could be provided by university faculty for the purposes of a not-for-credit summer job program, and as a result, there are certain liability issues that must be resolved.

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.)

The main method the program uses to help employers recruit students is through job fairs. The department sponsors two construction specific job fairs, which are in addition to the general job fairs sponsored by Career Services. These job fairs are held in October and February and attract between 19 and 30 employers.

Employers are encouraged to attend these job fairs on a regular basis, since demand for construction graduates has always out-paced supply, although this has lessened after the 2008 economic down turn. We strongly encourage employers to offer students summer jobs and internships in order that students might become better acquainted with the construction industry. Also, construction companies are invited to speak at our Construction Student Association (CSA) student chapter meetings. At these meetings representatives

from companies can present their companies' profiles and indicate employment opportunities.

A third method is for companies to attend our annual student/employer golf tournament, which is held in the spring and sponsored by the CSA student chapter. This year, the golf tournament will be sponsored at Onion Creek Country Club, a PGA caliber golf course in Austin, Texas.

Fourth, companies are invited to speak in appropriate construction classes, and field trips are taken to various construction sites. These activities provide both students and employers a chance to interact.

In addition to the above, employers can post information about job opportunities through Career Services.

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

The department uses its fall and spring job fairs to support both construction contractors and construction associations in placing students with appropriate employers. These employers provide summer employment, internships and full-time employment opportunities. The internship program has provided both students and employers an excellent opportunity to get to know one another. Often, the relationship developed during the internship leads to full-time employment after graduation. It should be noted that construction employment for construction students in Texas has been good even during the economic down turn of 2008. Therefore our current effort to place students with contractors has been highly successful.

Recently, the student officers and members of CSA have begun making periodic presentations at meetings of affiliated professional associations. This includes the Austin chapters of AGC, ABC, and NAHB. This has elevated the profile of our program among the professional members of these organizations and has served to enhance networking between our students and the industry. When combined with the well established career fairs mentioned above, such networking efforts have yielded a healthy, synergistic relationship between our student association and the local professional chapters with whom we have affiliation.

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 Construction Student Association (CSA) is the umbrella organization under which we are affiliated with three (3) national construction associations. These national associations are The Association of Builders and Contractors (ABC), The Associated General Contractors of America (AGC) and the National Association of Home Builders (NAHB). We are also directly affiliated with the

Austin branches of these three organizations. Each of these Austin associations has a CSA Student Ambassador. Stad Thomlinson is the ABC Ambassador, Chris Roench is the NAHB Ambassador, and Dillon Wilhelm is the AGC Ambassador. Interaction with these organizations include attending their membership meetings in Austin, sponsoring a table at their Awards Banquets, inviting their executive directors to Texas State to become familiar with our facility and program and taking advantage of the workshops these organizations provide including the OSHA ten-hour certification course.

2. List the major field trips taken during the past year. Include the job location, the number of participants, and the associated course, if any.

With $328 million of new construction projects on campus, we have been able to provide our students with a wealth of field trips within walking distance of our building in addition to off campus tours. Following is a list of field trips:

Associated Course	Job Location	No. of Participants	Semester of Field Trip
CIM and CM Students	Heldenfels Field Precast/Prestressed Plant	32	March 4th Spring 2011
TECH 3361 Commercial Construction	University Academic Center Project	35	June 24th Summer I 2011
TECH 3361 Commercial Construction	North Campus Housing Project	32	June 28th Summer I 2011
TECH 3361 Commercial Construction	North Side Complex Project	37	September 15th Fall 2011
TECH 4369 Contracts Ethics & Liability	Pre-bid meeting on RFQ for North Campus Housing Project	20	Fall 2011
TECH 3361 Commercial Construction	University Academic Center Project	30	November 1st Fall 2011
CIM and CM Students	Housing and Residential Life Office Building-On Campus	30	April 13 Spring 2012
TECH 3361 Commercial Construction	Performing Art Center-Parking Garage	11	June 15th Summer I 2012
TECH 3361 Commercial Construction	Performing Art Center-Main Building	11	June 29th Summer I 2012

3. List the guest lecturers for the past year. Include the lecturer's name, topic, date and course of meeting.

Following is a list of guest speakers we had during the past year.

Course or CSA Meeting	Guest Lecturer	Topic	Fall/ Spring
CSA Meeting	Mr. David Stayshich – Fluor	Commercial Construction and Employment Opportunities	Fall 2008
CSA Meeting	Ms. Josie Garrott – Texas State University-San Marcos Career Services	Resume Writing and Interviewing Skills	Fall 2008
TECH 3361	Mr. Evan McKee – Whiting-Turner	Strip Center Construction	Fall 2008
CSA Meeting	Mr. Frank Vera – Kiewit Offshore	Offshore Construction	Spring 2009
CSA Meeting	Mayor Susan Narvaiz – City of San Marcos	Community Service Projects	Spring 2009
TECH 1260	Mr. Joel Stone – SpawGlass	Commercial Construction & Contracting Methods	Spring 2009
TECH 2360	Mr. William Zieger – Genesis Homes	Residential – Luxury Home Construction	Spring 2009
TECH 3361	Mr. Fernando Diego – Joeris Construction	Commercial Contracting	Spring 2009
CSA Meeting	Ms. Vicki Poulos – Archer Western	Commercial Construction	Fall 2009
CSA Meeting	Mr. Curtis Seebeck – Seebeck Construction	Sustainable Residential Construction	Fall 2009
TECH 1260	Mr. Sean Van Delist	Concrete Industry Management	Fall 2009
TECH 1260	Dr. Earl Ingram – Ingram Ready Mix	Concrete Overview	Fall 2009
CSA Meeting	Mr. Curtis Rodgers – Kiewit	Using BIM in Heavy Highway Planning	Fall 2009
CSA Meeting	Mr. Jahan Haj-Ali-Ahmadi	Interoperability of Revit with Add-On Software	Fall 2009
TECH 2342	Mr. Eddie Updike – Trinity/Transit Mix	Ready Mix Concrete – Industry Overview	Spring 2010
TECH 1260	Mr. Joel Stone – SpawGlass	Commercial Construction	Spring 2010
TECH 2342	Mr. Victor Bretting – TAS Commercial Concrete Construction	Concrete Industry	Spring 2010
TECH 2360	Mr. William Zieger – Genesis Homes	Residential-Luxury Home Construction	Spring 2010
CSA Meeting	Mr. Charles Spencer – Flintco	Commercial Construction	Spring 2010
TECH 1260	Mr. Sean Van Delist – Tex-Mix Concrete	Use of Concrete and Careers in the Concrete Industry	Fall 2010
TECH 1260	Dr. Rich Szescy - TACA	Concrete Industry	Fall 2010
TECH 2342	Rusty Winters	Concrete Material Overview	Spring 2011
TECH 1260	Mr. Miguel Guerrero – Career Services	Resume Writing	Fall 2011
TECH 1260	William Holder-Trendmaker Home & Development	Residential Housing	Fall 2011
TECH 1260	Mr. Sean Van Delist – Tex-Mix Concrete	Use of Concrete and Careers in the Concrete Industry	Spring 2012
TECH 1260	Mr. Miguel Guerrero – Career Services	Resume Writing	Spring 2012
TECH 1260	Dr. Rich Szescy – TACA	Concrete Industry	Spring 2012
TECH 1260	Mr. David Stayshich – Fluor	Commercial Construction	Spring 2012
TECH 4361	Tommy Rutherford - Yates	Estimating, Ethics and Concrete & Earthwork Estimates	Spring 2012
TECH 4361	Timothy Blackstone - Turner	Hard Bids and Bid Day Exercise	Spring 2012

VIII. PUBLISHED INFORMATION TO THE PUBLIC

A. Selected Material

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

a. Texas State University – San Marcos Undergraduate and Graduate Catalogs are revised and printed in hard copy every two years, with the Undergraduate Catalog printed in even years and the Graduate Catalog printed in odd years. These Catalogs are also available on the Texas State website at: http://www.txstate.edu/curriculumservices/catalogs/undergraduate/catalogs/10-12.html

1. Note that addendums are published in the years between Catalog revisions and are available on the Texas State website.

b. Department of Engineering Technology website (www.txstate.edu/technology) includes:

1. News Item such as:
   - CSA Homecoming Tailgate
   - CSA Golf Tournament
   - CSA Meetings
2. Undergraduate Degree Programs
3. Faculty
4. Courses
5. Labs
6. Construction Advisory Board
7. Construction and Concrete Job Fairs
8. ACCE Accreditation

c. Department Newsletter

1. Published each fall and spring semester

d. Construction and Concrete Job Fair Announcements

1. Conducted in October and February

e. Printed Literature

1. BS in Construction Science and Management 8½ x 11" handout
2. Internship Brochure

B. Method of Material Selection

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

All materials that are released for public circulation (both print and internet) must be pre-approved by University Marketing.

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

   The Department of Engineering Technology follows university guidelines on the catalog, degree information sheet and other published materials. Materials are selected on the basis of whether or not it promotes the department and its programs, increases awareness of the department and its programs, whether it will likely strengthen our ties with the industry and alumni and whether it will strengthen our reputation in the university, the community and industry. This is generally a decision of the entire faculty with the program coordinator taking the lead in the project with input from the chair.

C. Methods of Distribution

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

   We use Texas State University-San Marcos to disseminate most program information. Our admissions office disseminates program information to a large number of prospective students including those who have expressed an interest in engineering or technology. The Department also mails out program information to prospective students. Prospective student information is provided by the admissions office. Information regarding our program is also informally circulated to the broader public through our network of alumni, industry partners and friends. Outstanding news regarding our student or faculty accomplishments are published by our university news paper and the city news paper.

   Another primary source of distributing published materials is recruiting events held by Texas State University-San Marcos. Bobcat Days, transfer and freshman advising, etc., allows for a broad dissemination of program information.

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

   The internet is today our primary venue for informing the public that this information is available. Most students and their families, government agencies and the industry today use the internet as the primary means to research any topic. We have also come to rely on the good reputation that the department has on campus, in town and with the construction industry to directly disseminate program information.

IX. GENERAL ANALYSIS

A. Program Quality Assessment

1.

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

The Construction Science and Management Program developed a systematic assessment plan, which provides for continuous improvement of the program in general, down to the specific content taught in each course. This plan was created to provide continuous evaluation and feedback so changes can be implemented into the construction program relative to the Program Mission Statement and associated goals and objectives, Strategic Plan, Departmental Program Outcomes, and specific Course Outcomes as needed.

1. The Mission Statement expresses the future direction for the program and how we plan to get there in general terms.

2. Construction Program's Strategic Plan is developed every five (5) years during the same time frame as the department develops its five year Strategic Plan. This plan sets a clear direction as to what the program plans to accomplish in the next five years. The Construction Program Strategic Plan for 2012-2017 contains five major topics consisting of 1) Program, 2) Faculty, 3) Students, 4) Applied Research and 5) Outreach/Fundraising. Under each topic are one or more goals and under the goals are specific objectives that will be used to accomplish the goal. Appendix S contains a copy of this plan.

2. The seven (7) Departmental Program Outcomes specifically set the overall goals for the program.

3. Course Outcomes are based on the seven Departmental Program Outcomes and specifically state what student learning outcomes each course will accomplish. Each of the Course Outcomes is placed in a matrix with Departmental Program Outcomes. This ensures that all seven Departmental Program Outcomes are being adequately covered and that the Course Outcomes are appropriate for the course in which they are being taught (See Appendix R).

4. The content taught in each course is also mapped back to the ACCE Curriculum Matrix to insure that all required ACCE topics are being covered.

Following is our specific Program Delivery Assessment Plan in which we use 6 direct measures and 7 indirect measures to continually assess our program. The input received from both the direct and indirect measures are evaluated and necessary changes made to the program as part of the input output-process.

Program Delivery Assessment

Direct Measures:

1. Reviews from the Senior Capstone Course TECH 4360. (Appendix M).
2. Review of individual course notebooks. (Notebooks will be available to the visiting team).
3. Review of each Instructor's "Course Assessment and Improvement Plan" using both subjective and objective methods of measurement. (Appendix E and E_1).
4. Review of Program Assessment by way of Course Learning Outcomes. (SACS, Appendix L, and L_1)
5. Construction Advisory Board's review of the Construction Program. (Appendix O & P).
6. Construction Program Coordinator's assessment of the progress made in meeting the program's Mission, Strategic Plan and Construction Program Outcomes. (Appendix H).

Indirect Measures:

1. Alumni Survey Results – (Graduating Seniors) conducted once a year by the University. (Appendix D).
2. Construction Alumni Survey (conducted every three years by the department). (Appendix P).
3. TECH 4390 Final Self-Evaluation Internship Assignment. (Appendix G).
4. TECH 4390 Learning Outcome Assessment – Student Self-Evaluations. (Appendix G_1).
5. TECH 4390 Learning Outcome Assessment – Industrial Supervisor's Evaluation. (Appendix G_2).
6. TECH 4390 Internship Company Supervisor's Evaluation of Intern. (Appendix G_3)
7. TECH 4360 Senior Capstone Grading Criterion. (Appendix M)
8. Employers Evaluation of Texas State University Construction Science and Management Employee. (Appendix Q)

Following is a more in-depth explanation of each of the Direct and Indirect measures used to continuously improve the construction program:

Direct Measurements

1. Reviews from the Senior Capstone Course (TECH 4360):

   We have redesigned TECH 4360, as of the fall 2011 semester, to become a Senior Capstone Course in which we select a real construction project submitted by a sponsoring construction company. In this Capstone Course, students work in groups to prepare a proposal for submission to a real-world owner, based on the owner's RFP. During the first semester the course was offered, Turner Construction Company provided a RFP to replace all air handlers at the Bexar County Correctional Facility in San Antonio, Texas.

   The student performance is graded in the course using the "TECH 4360 Grading Criterion" evaluation sheet (Appendix M). The judges from the sponsoring company use a 12 item scoring sheet to judge the "Team's" overall performance on items ranging from, "Overall Presence" to "Understanding Owner Concerns". The second part of the "Grading Criterion" rating sheet asks the judges to rate the performance of each member

of the group on a 1-5 scale. In addition to rating each student on a numerical scale, the judges are also provided space to make comments on each student member of the team. Also, the instructor of the course will grade the written RFP's based on the template given to the students in the class.

After the presentations are given, the judges' numerical data are tabulated and improvements to the course are identified for implementation for the following semester. The instructor also summarizes the results of the graded RFP's, noting areas of needed improvement.

2. Review of individual course notebooks:

   Each year, the primary faculty member responsible for any particular course submits a course notebook for those courses for which he/she has responsibility. This is done by every faculty member, every semester, and for each of the 20 construction courses our students are required to complete for their major. The CSM evaluation of each course is based on:

   a. How well the course covered the identified course outcomes based on the Construction Program Learning Outcomes
   b. How well the course covered the assigned ACCE Curriculum Matrix items

   The information gained from this review is used to improve the course the following year or semester.

3. Review of each Instructor's "Course Assessment and Improvement Plan" using both subjective and objective methods of measurement:

   Course learning outcomes are evaluated by both subjective and objective methodologies. The subjective method asks students to evaluate how well they believe they have mastered the "Learning Outcomes" for the course, using an eight (8) point Likert Scale ranging from "*Very Strongly Disagree*" to "*Very Strongly Agree*" (Appendix E). The objective method calculates individual performances as well as a class average on each of the relevant "Learning Outcomes" based on a variety of objective measurements, including embedded test questions, laboratory assignments, team projects, presentations, etc. Because both the specific "Learning Outcomes" and the general classroom approach of the several classes can vary from course to course, the specific kinds of objective measurements also vary from course to course.

   The results from both the subjective and the objective measurements are averaged each semester and recorded in each course's "Instructor's Course Assessment and Improvement Plan" (Appendix E_1), found in each course notebook behind the "Course Assessment" tab. Along with both semester-specific averages, a running, historic average is also computed for every course. The semester-specific averages for both measurements are compared to the historic average every semester, in order to examine any observable trends in learning success.

   Based on the calculated numerical values and his/her interpretation of their significance and meaning, the instructor composes his/her Assessment and Improvement Plan expressing how he/she proposes to improve the course in a subsequent semester. Defined as causes for concern are those instances when either the subjective or objective

measurements fall below 70% for a specific Learning Outcome or when the difference between the subjective and objective measurements for a given Learning Outcome is greater than 20%. In either of these cases, the instructor needs to address how the situation is to be corrected using the comment section of the "Instructor's Course Assessment and Improvement Plan" (Appendix E_1). Also, this information is shared with the Construction Program Coordinator in an effort to formulate the most effective strategies for addressing any problem going forward.

4. Review of Program Outcomes by way of Course Learning Outcomes:

   Texas State University requires annual review of all academic programs, from a student learning perspective, for the purposes of the Southern Association of Colleges and Schools (SACS) accreditation process. This annual review is administered through the office of Academic Development and Assessment (ADA) and the evaluative results are posted to the ADA web site at the conclusion of each academic year (i.e., in May of each year).

   Because this annual program assessment is required by the university, the Department of Engineering Technology made a decision to unify the ACCE and SACS assessment processes for our Construction Science and Management program. We believe that the unification of these processes will lead to efficiencies in annual program assessment and that the incorporation of ACCE assessment into the usual ADA methodology will assure consistency with established, campus-wide assessment standards.

   Academic Development and Assessment requires that all academic programs develop several broad, program-level learning outcomes, which must be assessed each year. Under the ADA process, each of these program outcomes must be assessed using at least two methods of assessment, and these methods must be based upon observable student performance standards. In September of each year, these program outcomes and the associated methods of assessment are posted to the ADA web site by the department Chair. At the conclusion of the academic year, faculty must assess whether or not student learning has satisfied adopted standards, and in those cases where performance is below established minimums, an action plan must be developed. The Chair then collects student performance data from the faculty, and based upon faculty input, he prepares the annual report and improvement plan, which is published on the ADA web site.

   The faculty of our CSM program have adopted seven program outcomes for inclusion in the ADA assessment process. These are the same seven program-level outcomes developed by the faculty for purposes of ACCE accreditation. By integrating ACCE curriculum outcomes into ADA's annual program assessment, we have streamlined these two processes and assured that ACCE program assessment is consistent with established university standards. The seven program outcomes adopted for annual review are:

   1. Students will demonstrate technical knowledge and skills acquired through the study of the construction discipline.
   2. Students will demonstrate an understanding of construction processes.
   3. Students will demonstrate effective communication skills through the successful execution of graphic communication and written papers.
   4. Students will recognize the need for engagement in lifelong learning.
   5. Students will demonstrate strong leadership, management and teamwork skills.

6. Students will apply modern technology to solve construction related problems.
7. Students will recognize and apply high professional practices and ethical standards.

These student learning outcomes are assessed in a subset of construction courses which have direct relevance to the particular knowledge base and skill sets adopted for assessment. In the case of outcome number 4, relating to lifelong learning, student participation in the Construction Student Association is also assessed.

Each of the above program outcomes must be assessed using at least two methods of assessment, and these methods of assessment must be based upon observable student performance standards. Each method of assessment incorporates two separate standards, an individual performance standard and a group compliance standard. Like the course-level outcomes described under Direct Measure number 3, individual student performance can be based on a variety of objective measurements, including embedded test questions, laboratory assignments, team projects, presentations, etc. In any particular course wherein one of these program outcomes is being assessed, the responsible faculty member must first determine from class records those students who have met or exceeded the individual performance standard. Once this is known, the faculty member computes the percentage of the class that has met this individual standard and he/she then compares this percentage to the group compliance standard. In any class where the percentage of students meeting the individual performance standard is below the minimum group compliance standard, an action plan is developed by that faculty member for the purpose of improving student learning going forward.

Upon receiving student performance data and action plans from various faculty, the department Chair then prepares the annual report and improvement plan, which is published on ADA's web site (Appendices L, and L_1). This annual report and improvement plan is then made available to a variety of stakeholders, including program faculty, the CAB, the Program Coordinator, and the university administration. Information contained in the annual report is used by stakeholders for the purpose of program improvement. A particular advantage of ADA's process is that it provides for a standardized review, which must occur annually by university policy, thereby assuring a process of "continuous" improvement, even during those intervening years between accreditation site visits.

5. Construction Advisory Board's review of the Construction Program:

Annually, the CAB is given a course description of the 20 required construction courses and the six (6) required Business Minor courses, and they are asked to rank their relevancy in relation to preparing students for the construction industry. The CAB is also given an opportunity to review all course notebooks. Based on their comments, changes have been made either to the overall curriculum or to individual courses. This has been a very valuable source of input, which has resulted in our incorporating more industry speakers and field trips into the curriculum, more practical construction problems based on real construction documents and real-world situations, and extending the actual length of the internship experience. Also, the CAB reviews the program's Mission Statement, Strategic Plan, course-level and program-level Learning Outcomes annually.

6. Construction Program Coordinator's assessment of the progress in meeting the program's Mission:

   Every five years, the construction program develops its long-term Strategic Plan, setting critical goals and objectives for the next five-year interval. This cycle occurs during the same time frame that the department is required to create its five year Strategic Plan for the University. The process involves the construction faculty meeting for the purpose of identifying important strategic-level goals and objectives for the next five years. This Strategic Plan is also shared with the CAB for their input. The Strategic Plan is reviewed annually by both the construction faculty and the Program Coordinator in order to determine which goals and objectives have been accomplished, those that remain to be accomplished, and to establish a plan of action for how to achieve them in the remaining years of the planning cycle. The Construction Program Coordinator presents a summary to the Chair annually reporting on the progress being made in achieving the goals set out by the plan. During this meeting the Program Coordinator and department Chair discuss resource allocation as it relates to accomplishing the goals and objectives set forth in the plan. Each year's summary of progress made on the Strategic Plan is shared with the CAB and their comments sought as these relate to the proposed action plan.

   Indirect Measurements

1. Alumni Survey Results (Graduating Seniors):

   We are in the process of converting from using our own program-developed Senior Exit Survey instrument, which we had traditionally administered in the Capstone Course (TECH 4360), to the University's "Alumni Survey Results" of graduating seniors (Appendix D). This instrument is given to all graduating seniors and can be sorted by major code. This survey provides valuable information on student profiles, demographics, starting salaries, effect on the student's personal development and more.

   This information is reviewed annually by the Construction Program Coordinator and the Construction Faculty. Based on the survey information and faculty discussion of results, appropriate changes are made to the program.

2. Construction Alumni Survey (conducted every three years):

   The Alumni Survey is administered every three years. This survey is sent to all graduates of the Construction Program during the prior three (3) years to gain a perspective of how well the Program prepared them for their careers. The survey asks general information questions such as the company they work for, starting salaries and position title. It also asks them to rate the importance of Program Learning Outcomes, as these relate to their professional preparedness. In addition, each course is rated on a 1-5 Likert scale and alumni are asked to provide open-ended summary comments at the end of the survey. The last survey was conducted in the summer of 2009, with the current survey scheduled to be administered during the summer of 2012. This information is summarized and the areas of concern identified by graduates are addressed in the construction program strategic planning process.

3. TECH 4390 Final Self-Evaluation Internship Assignment:

   At the end of the TECH 4390 Internship, students are required to complete this evaluation form. They are asked to rate their relationship with their Internship Industrial Supervisor, their experience working with other employees and to provide suggestions for improving the internship. This information is summarized at the end of the summer's internship program by the Internship Coordinator and appropriate changes are made to the program as warranted.

4. TECH 4390 Learning Outcome Assessment – Student Self-Evaluations:

   At the end of the TECH 4390 Internship, which students are required to take after completing a minimum of 75 credit hours, they are asked to complete the "Learning Outcomes Assessment Self-Evaluation Form" (Appendix G_1). This form asks them to rate the five Learning Outcomes on a five point Likert Scale ranging from "*Very Strongly Disagree*" to "*Very Strongly Agree*". They are also provided space on the survey to make open-ended comments regarding each of the five statements. Also included in this Appendix is a copy of the updated "Learning Outcomes Assessment Self-Evaluation Form" that includes the current seven (7) Departmental Program Learning Outcomes.

   This information is summarized at the end of the summer internships by the Internship Coordinator and reviewed by the Construction Program Coordinator, CAB and Construction Faculty. Based on survey results, faculty discussions and CAB input, appropriate adjustments are made to program curricula and courses, in order to address any identified weaknesses.

5. TECH 4390 Learning Outcomes Assessment – Industrial Supervisor's Evaluation:

   At the end of the internship, the Industrial Supervisor of the intern completes the "Learning Outcomes Assessment" form which contains the same five (5) point Likert scale as that completed by the student under Indirect Measure 4. These results are summarized to determine areas of improvement. Also, results obtained from the company supervisor are compared to those provided by the student to determine if there is a difference in perception between the student rating and Industrial Supervisor's rating for the same "Learning Outcome".

6. TECH 4390 Internship Company Supervisor's Evaluation of Intern:

   At the end of the TECH 4390 Internship, the company supervisor of the intern completes a 15 question survey where he/she is asked to rate the intern on 15 characteristics ranging from "Responsibility" to Technical Knowledge" on a 1-5 scale (Appendix G_3). The supervisor is also given an opportunity to provide written comments about the student, to recommend areas for further academic study, and to provide any "other" comments that he/she might think warranted. The Internship Coordinator summarizes these survey results and provides this information to the Construction Program Coordinator. This information is shared with the CAB and construction faculty and appropriate changes to the program are implemented as necessary.

7. TECH 4360 Senior Capstone Grading Criterion:

   The 4360 course was modified to become a Senior Capstone Course, which was first taught during the Fall 2011 semester. This class was designed to incorporate an actual construction project from which the students developed the proper construction documents to be presented to the project owner. During the Fall 2011 semester, Turner Construction Company provided the RFP documents to the students for replacing all air handlers at the Bexar County Correctional Facility in San Antonio. At the end of the semester, the student groups made their presentations. Turner completed an evaluation of the capstone project based on the group's presentation along with each student's contributions to the group's presentation. These evaluations were summarized and appropriate changes were made to the program in identified areas that needed improvement. Also, the instructor and sponsoring company discuss improvements that can be made to the program to improve student performance in future classes.

8. Employers Evaluation of Texas State University Construction Science and Management Employee (Appendix Q):

   The employers of our recent graduates are asked to complete a questionnaire. This questionnaire consists of 16 categories which the employer is requested to rate by checking a response from the five (5) available responses. These categories range from "Responsibility" to "Leadership Quality". The employer is also given the chance to answer four (4) open ended questions ranging from "The employee's outstanding qualities" to "Other comments about the employee and/or how well the Construction Science and Management Program prepared the employee for the real world".

   The 16 categories are numerically scored to determine the areas that can be improved and the categories that are rated high.

Evaluation of Teaching

The quality of teaching in the Department of Engineering Technology is evaluated by means of three important processes; 1) student course evaluations, 2) peer in-class observations, and 3) the annual faculty evaluation required by university policy. Each of these is described in some detail below.

1. Student Course Evaluations

   The department requires the administration of two different forms of student course evaluations in every course, every semester. The first is a survey questionnaire based on a five-point Likert scale that can be machine scored. The second is a form that requests written responses from students to six questions relating to teaching quality.

   The machine scored survey instrument includes 31 questions evaluating teaching quality in seven categories. Those categories are:

- Learning (4 questions)
- Enthusiasm (2 questions)
- Organization (4 questions)
- Individual Rapport (3 questions)
- Examinations (5 questions)
- Assignments (2 questions)
- Student and Course Characteristics (11 questions)

The initial 20 questions of this questionnaire are rated on a five response Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. The remaining questions are scored on a question-specific scale. All responses are recorded on a computer grading sheet which is sent to the "Testing Research-Support & Evaluation Center" for numerical analysis (Appendix J). The returned "Course Section Evaluation Report" includes the frequency distribution, mean, and standard deviation for each question. These descriptive statistics for any given class section are also compared to the corresponding departmental norms.

The course evaluation form that asks students to provide written responses simply queries students on six aspects of instructional quality and class organization. The areas of instruction spoken to on this form include:

1. The objectives, activities, content, and/or requirements of this course and evaluation methods.
2. The technical and/or teaching skills of the instructor, and if he/she is aware of the current developments in his/her field.
3. The degree and/or type of communication between student and instructor.
4. The degree of your success and satisfaction with this course.
5. Would you recommend this course and/or instructor to a friend, and why?
6. Make any other statements you wish about this course and/or instructor.

Both course evaluations are administered near the end of the semester on the same day. Student responses are collected by one of the students in the class who delivers these to the department Administrative Assistant. The machine scored surveys are delivered to the university's Testing Research-Support & Evaluation Center for processing. The written student evaluations are stored in the departmental office. All student evaluations are anonymous, and faculty members are not permitted to see their course evaluations until such time as semester grades have been finally and irrevocably submitted. Thereafter, both the Course Section Evaluation Report from the machine scored survey and the students' written responses are made available to faculty for review.

Student course evaluations are also used by the Program Coordinator, the department Personnel Committee, and the Chair to assess quality of teaching during the annual performance evaluation of faculty (described below). When appropriate, individual faculty members are provided with guidance as a part of the annual evaluation process.

2. Peer In-Class Observations of Teaching

The teaching of all tenure-track faculty members must be observed at least twice each academic year by a member of the senior faculty. Typically, one such observation occurs during the fall semester and the second during the spring. These in-class observations are conducted at pre-arranged times by mutual agreement of the observer and the faculty member being observed. Within ten days of having completed an observation the observer must provide a written report to the Chair who reviews the report before providing a copy to the observed faculty member. These peer in-class observations are intended to provide constructive criticism to less experienced tenure-track faculty by their more experienced colleagues.

Like the student course evaluations referenced above, these peer in-class observations of teaching are used by the Program Coordinator, Personnel Committee, and the department Chair to assess quality of teaching during the annual performance evaluation of faculty (described below). When appropriate, individual faculty members are provided with guidance as a part of the annual evaluation process.

3. Annual Faculty Performance Evaluation

A third method of faculty evaluation is accomplished through the department's annual process of establishing personal professional objectives (PPOs). At the beginning of each calendar year, faculty submit to the chair a list of PPOs indicating goals to be pursued in each of the three areas of teaching, research and service and the percentage of their total efforts to be allocated to each area. Upon receiving PPOs the chair reviews these and indicates his concurrence with each faculty member's annual goals. Should the chair have reservations about a particular faculty member's annual objectives he will schedule a meeting with that faculty member to negotiate a resolution. Each faculty member also submits a report of accomplishments for the past calendar year, which indicates the degree of success achieved in meeting the previous year's PPOs. This report also documents any additional accomplishments not anticipated the prior January. These annual accomplishment reports are reviewed independently by the chair and personnel committee who then use such reviews to support and justify recommendations concerning merit awards for each faculty member. Again, merit determinations are independently made by the chair and the personnel committee. Should a discrepancy arise between the recommendations of the chair and personnel committee, a meeting is scheduled to resolve these differences. The Dean of the College is the final judge of merit recommendations. Final recommendations are then made by the Dean to the Provost.

Obviously, because the Program Coordinator is a member of the Personnel Committee, he is a participant in the above described annual evaluation process. This is a comprehensive annual evaluation, and it therefore encompasses all three major areas of faculty performance; teaching, research, and service. Junior members of the faculty, both tenure-track faculty and non-tenure-track lecturers, receive extensive, written, summative feedback with regard to their annual performance. Tenure-track faculty receive written feedback from both the Personnel Committee and the Chair as a part of their reappointment reviews. Non-tenure track faculty receive written feedback only from the Chair as a function of the annual review.

Research (Scholarly/Creative Review for Tenured/Tenure-Track Faculty)

The research productivity of a tenured or tenure-track faculty member is reviewed annually as a part of the annual evaluation process outlined above. Whereas tenured, senior members of the faculty do not receive any written analysis of their performance, tenure-track faculty receive extensive, written, summative feedback from both the Personnel Committee and the department Chair. Non-tenure-track lecturers do not have any scholarly/creative or research expectation, and thus, do not receive written reviews of this aspect of faculty performance.

Service

The service contributions of all faculty members are reviewed annually as a part of the annual evaluation process outlined above. Whereas tenured, senior members of the faculty do not receive any written analysis of their performance, tenure-track faculty receive extensive, written, summative feedback from both the Personnel Committee and the department Chair. Non-tenure track faculty receive written feedback only from the Chair as a function of the annual review.

b. Describe how outcome assessment results are correlated with mission, goals, program content, and outcomes to implement change where needed.

Summaries of each of the Direct and Indirect measurements along with evaluation of faculty members' teaching, service and scholarship are made on an annual basis and are summarized in the "Program Assessment", Appendix H. Each summary contains a list of identified strengths and weaknesses based on the inputs from the various Direct and Indirect measurements, along with evaluations of a faculty member's teaching, service and scholarship. From these summaries, a recommended plan of action is developed to correct the identified short comings. These actions can range from simply modifying the content of a course, to extending the length of the TECH 4390 Internship, to creating a "Professional Faculty Appointment", which currently does not exist at the university. Annually, during the fall semester, the strength and weaknesses of the program are reviewed by the CSM faculty and correlated back to the Mission Statement, Program Goals and Objectives in order to determine if any or all of these need to be modified. Every five years, the Mission Statement and related Program Goals and Objectives are reviewed in depth and necessary changes made. This cycle corresponds with the five year University Strategic Plan cycle. Our existing Mission Statement, Program Goals and Objectives can be found under C, "Construction Unit" in Section I of this report. Our new "Construction Program Strategic Plan for 2012-2017", which lists five (5) major topics, and their associated goals and objectives can be found in Appendix S. This new Strategic Plan, which was adopted during the spring semester of 2012, will guide program development over the coming five-year period .

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.

Following is a list of the Appendices used in the program assessment process and a summary of their results (inputs):

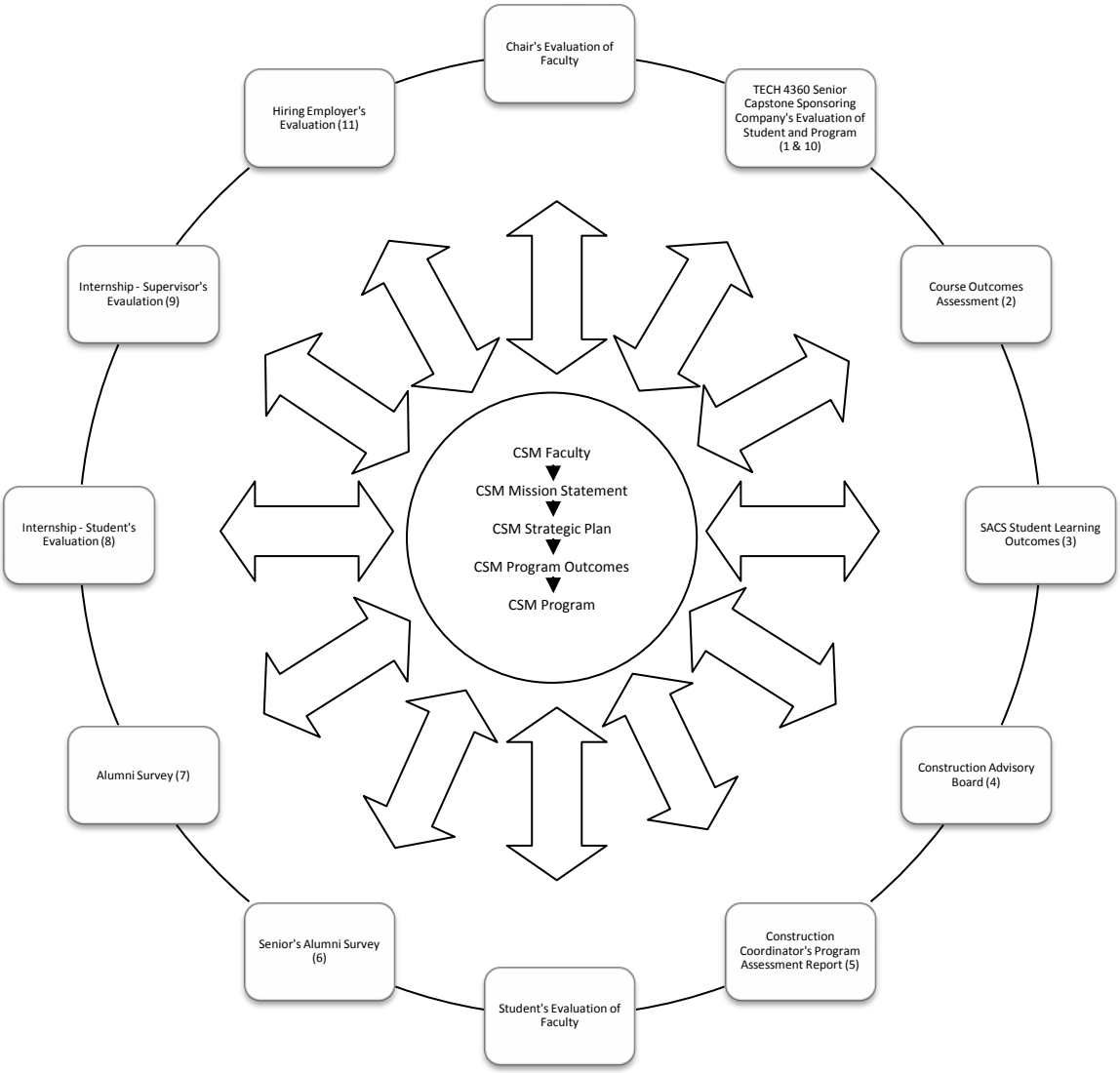
Item	Description	Location
1	Mission Statement, Goals and Objectives	See Introduction C, Construction Unit
2	Course Outlines (Syllabi)	Appendix B
3	Alumni Survey Results (Graduating Seniors) Examples for 2010 and 2011	Appendix D
4	Course Outcomes Assessment – Student Self Evaluation Study	Appendix E
5	Instructor's Course – Assessment and Improvement Plan	Appendix E_1
6	Composite Performance and Merit Evaluation Rating and Calculation Worksheet (both for tenure /tenure track and instructors)	Appendix F
7	TECH 4390 Internship, Final Self-Evaluation of Internship Assignment (Student)	Appendix G
8	TECH 4390 Internship, Learning Outcomes Assessment Student Self Evaluation	Appendix G_1
9	TECH 4390 Internship, Learning Outcomes Assessment – Industrial Supervisor's Evaluation	Appendix G_2
10	TECH 4390 Internship, Company Supervisor's Evaluation of Intern (Final Evaluation)	Appendix G_3
11	Program Assessment Report	Appendix H
12	Construction Science and Management with Business Minor – Flow Sheet	Appendix I
13	Faculty/Classroom Evaluations	Appendix J
14	Student Reaction to Instruction and Course	Appendix K
15	2010/2011 Academic Program Student Learning Outcome Assessment (SACS)	Appendix L
16	2011/2012 Academic Program Student Learning Outcome Assessment Template (SACS)	Appendix L_1
17	TECH 4360 Grading Criterion (Senior Capstone Course)	Appendix M
18	Construction Advisory Board Minutes from 10/26/11 and 3/28/12 Meetings	Appendix N
19	Construction Advisory Board CSM Course Rating Sheet	Appendix O
20	Construction Alumni Survey	Appendix P
21	Employer Evaluation of Texas State University Construction Science and Management Employee	Appendix Q
22	Departmental Program Outcomes with associated Course Outcomes Matrix	Appendix R
23	Construction Program Strategic Plan for 2012-2017	Appendix S

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.

A copy of the 2010/2011 CSM "Program Assessment Report" is provided in Appendix H. This report summarizes the inputs received from the major stakeholders of the program including the CAB, students, graduating seniors, employers, alumni and faculty. Following the input section is an output section which details a plan of action to improve identified weaknesses in the program. See Graph 1 in this section for a pictorial representation of our established Quality Plan, Inputs and Outputs.

QUALITY PLAN

Input and Output Chart



Graph 1: Quality Plan – Input and Output Chart

Program Delivery Assessment Schedule/Person(s) Responsible

Graph No.	Direct & Indirect Measures	Person(s) Responsible	Deadline
	Direct Measures:		
1	• Reviews from the Senior Capstone Course TECH 4360 (Appendix M)	Sharma	July 15
2	•Review of individual course notebooks •Review of each instructor's "Course Assessment and Improvement Plan" using both subjective and objective methods of measurement (Appendix E and E_1)	Winek/Spencer	July 15
3	•Review of Program Assessment by way of Course Learning Outcomes (SACS, Appendix L and L_1)	Batey	July 15
4	•Construction Advisory Board's review of the Construction Program (Appendix O & P)	Pawelek/Winek	July 15
5	•Construction Program Coordinator's assessment of the progress made in meeting the program's Mission, Strategic Plan and Construction Program Outcomes (Appendix H)	Winek	August 31
	Indirect Measures:		
6	•Alumni Survey Results-Graduating Seniors conducted once a year by the University (Appendix D)	Winek	July 15
7	•Construction Alumni Survey –conducted every three years by the department (Appendix P)	Spencer	July 15, every third year
8 a **b** **_____**	•TECH 4390 Final Self-Evaluation Internship Assignment (Appendix G). •TECH 4390 Learning Outcome Assessment-Student Self-Evaluations (Appendix G_1)	Spencer	July 15
9 a **b**	•TECH 4390 Learning Outcome Assessment-Industrial Supervisor's Evaluation (Appendix G_2) •TECH 4390 Internship Company Supervisor's Evaluation of Intern (appendix G_3)		
10	•TECH 4360 Senior Capstone Grading Criterion (Appendix M)	Sharma	July 15
11	•Employers Evaluation of Texas State University Construction Science and Management Employee (Appendix Q)	Sharma	July 15

4. Describe program strengths, weaknesses, and opportunities identified in the quality assessment program described above.

Strengths:

1. Young, tenure-track faculty having construction credentials
2. Job placement of program graduates
3. Contemporary curriculum
4. Budget
5. Construction Advisory Board support
6. Facilities
7. Laboratory Technician support
8. Concrete Industry Management (CIM) faculty-teaching support
9. Location

Weaknesses:

1. Young, tenure-track faculty and non-tenure-track senior instructors with various degrees of experience.
2. Incorporate more construction documents and actual construction based problems in classes.
3. Improve CSM major advising
4. Improve critical thinking and problem solving skills

Opportunities:

1. Adding a "Professional Faculty Appointment" to the university's definition of faculty roles, and then adding such faculty in support of the CSM program.
2. Improved cooperation between the CSM and Concrete Industry Management (CIM) faculty

5. State specific plans, including schedule, for overcoming identified weaknesses and incorporating identified opportunities into the program.

Following is the CSM Program's plan to correct the identified weaknesses:

Introduction: The CSM faculty consists of six (6) full time faculty. One is a tenured Professor, two are tenure-track Assistant Professors, and three are senior instructors. Of the six, only Dr. Winek is tenured professor with 31 years of experience at the university. Dr. Hager is a senior lecture with over 14 years of experience at Texas State University. The two tenure track faculty are Dr. Lee, who is in his fourth year, and Dr. Talley who is in her first semester. We also have two senior lecturers who are relatively new to the program. Ms. B. J. Spencer has returned to the CSM program after having taught for us previously for about 5 years. She is currently pursuing a Doctorate Degree in Education at Texas State University. Mr. Sharma joined us three years ago and is currently pursuing a Ph.D. in Civil Engineering at the University of Texas in Austin.

1. Young, Tenure-Track Faculty and Non-Tenure-Track Senior Lecturers:

Young, Tenure-Track Faculty:
Young, tenure-track faculty have been identified both as a strength and a weakness. This is because they bring energy, contemporary academic preparation and new ideas to the

program. At the same time, however, they lack experience working in a university setting, they do not have extensive working relationships with industry in the local area and they have to be concerned about earning tenure and promotion. To help them become successful CSM faculty, the senior faculty carefully guide them, so they engage in activities that benefit both the program and their own success in earning tenure and promotion. The extensive plan we use to guide these faculty in the areas of Teaching, Service and Scholarship is outlined under Item 1 of this section under Evaluation of Teaching, Research (Scholarly/Creative Review for Tenured/Tenure-Track Faculty) and Service. Hopefully, Dr. Lee will earn tenure and promotion to Associate Professor in 2013, with Dr. Talley beginning her tenure and promotion period next Fall. Note that since Dr. Talley joined us during the Spring of 2012, or mid-academic year, her tenure and promotion period will not begin until the next cycle, or the Fall of 2012.

Senior Lecturers:
Both Ms. Spencer and Mr. Sharma are promising senior lecturers who bring a unique perspective to the department. Ms. Spencer is a registered architect with a Master's Degree in Architecture from Texas A & M. Mr. Sharma has his Master's from the Del Web School of Construction at Arizona State University, and he brings to the program several years of industry experience. Both senior lecturers are working towards their Doctorate Degrees, which means we have to balance their workload in the department to be compatible with their academic studies. By reducing their workload, we hope to see both complete their terminal degrees in three years or by the end of the 2015/2016 academic year. Then, if possible, we would like to convert one or both of their positions to tenure track, at which time they can devote 100% of their effort to teaching, service and scholarship.

2. Incorporate More Construction Documents and Actual Construction Based Problems in Classes

We are currently bringing together the younger faculty with construction professionals and established faculty to share construction documents. For example, these may be documents construction professionals are using in the field, or established classes showing the methods used to estimate or schedule a project. To measure the progress being made, the Construction Program Coordinator sends out the "Construction Course Survey" each semester asking faculty members, among other things, the construction documents used in the class, the number of construction site tours conducted, the number of guest speakers invited, and those construction specific software applications used in the course. The goal is to have all construction courses include appropriate construction documents, software, site tours and guest speakers within two years, or by the end of the Spring 2014 semester.

3. Improve CSM Major Advising

This weakness has been identified by our graduating seniors and is being addressed in three ways. First, the faculty has or will receive training on our new "Banner" advising software from the College of Science and Engineering advising office, along with specific CSM major advising training given by the Construction Program Coordinator. Second, several new advising forms have been developed to standardize the CSM advising process. Third, students are now required to see their CSM advisor before registering for classes as part of a TECH 1260 class assignment. It is hoped that students

will develop a relationship early on with their CSM advisor that will last throughout their stay at Texas State. This problem was identified using the "Rating Classes and Advising" section from the 2011 Alumni Survey Results (Graduating Students), under question 2, which asked respondents, *"Please rate the quality of advising you received from faculty in your department"*. A Likert scale from 1 (Very Good) to 5 (Very Poor) was used. The construction majors rated this item at a 2.08 compared to the university average of 1.70. We hope to reduce this high rating to be equal to or below the university mean in four (4) years. This is the time it will take to graduate enough CSM majors, who have experienced the advising changes mentioned above to see a difference in the rating for this item. (See Appendix D for survey results).

4. Improve Critical Thinking and Problem Solving Skills

We have begun a conserted effort to include more critical thinking and problem solving skills through experiential learning activities being introduced into appropriate construction courses. To monitor the progress being made, the "Construction Course Survey" is required to be completed at the end of every semester by each instructor. Instructors are asked to list those critical thinking/problem solving skills and activities they include in the course. This was one area mentioned as a weakness in our Alumni Survey Results (Graduating Senior) for 2011. In this 2011 survey, under the "Personal Development" section, question 2, which read, *"To what extend did your education at Texas State affect your personal development in critical and logical thinking"*, construction students rated this item at 1.69 compared to the university mean of 1.39. These ratings were based on a 1 (Very Much) to 3 (Very Little) Likert scale. We hope to reduce this rating to be equal to or better than the university mean in four years. This will be the required time period to graduate a sufficient number of students under the new CSM degree, which was first offered during the Fall of 2010, to accurately measure the impact of the change made to the program to correct this deficiency.

Following is the CSM Program's plan to take advantage of identified "Opportunities" for the Program:

1. Add a Professional Position to the CSM Faculty

We have initiated a process for seeking the university administration's approval to create a "Professional Faculty Appointment," and to have this appointment recognized and officially sanctioned under the university's faculty definitions. Persons hired under this new category of faculty appointment could hold rank, but would not be tenure-track. They would, instead, be hired for a specific contract term. An individual's eligibility to hold a specific rank would be determined by degrees earned, his/her number of years of industry experience, and professional licensure/certifications held. Such faculty members would be professional practitioners whose primary responsibilities would be teaching and industry outreach, but they would have no research or scholarship requirement. It is our expectation that these individuals would teach upper-division undergraduate courses, especially those courses heavy in industry-specific content. Examples would include the TECH 4361 Construction Estimating course, the TECH 4364 Construction Project Management and Scheduling course, and the new TECH 4360 Senior Capstone course. The great advantage of having these professional faculty on staff would not only be that they will bring real-world, contemporary industry practices into the classroom, but that they will free our tenured and tenure-track faculty to teach graduate level offerings and

conduct relevant research. It is our hope that we might be able to have this professional faculty appointment approved by the university administration within a year, and that it might be possible to hire at least two such individuals over the course of the next three years.

2. Improve Cooperation Between the CSM and the Concrete Industry Management CIM Faculty

By way of introduction, 3 ½ years ago the department began to offer the BS in Concrete Industry Management Degree. This degree brought with it three (3) new tenure track faculty positions. These three positions were filled by faculty having Ph.D. credentials in Civil and Structural Engineering. We are encouraging both the CIM and CSM faculty to collaborate closely together, particularly in the area of scholarship. This has begun to yield results as the CIM faculty, working jointly with CSM faculty, received the first TxDOT (Texas Department of Transportation) grant in the University's history. We hope to continue the CSM/CIM collaboration in the future with over $250,000 in new grant funding over the next three years and at least six resulting collaborative refereed journal articles being published.

B. Future Plans

1. Describe the change(s) in goals and outcomes of the construction education program as a result of program's quality assessment plan.

Please see the "Construction Program Strategic Plan for 2012-2017", which lists the six (6) topical areas we will concentrate on for the next five years and their associated Goals and Objectives (Appendix S). This new Strategic Plan can be compared with the 2008-2012 plan found under the "Introduction", Item "C".

Following is a summary of the major changes for the next five years:

1. Become ACCE accredited.
2. Incorporate more project based learning activities into the classroom along with incorporating more construction documents, field trips and guest speakers.
3. Concentrate on developing our younger faculty.
4. Attract high quality and diverse students who are capable of successfully completing the CSM major.
5. Monitor the success of the new CSM degree and the effect of the Pre-Construction curriculum on enrollment.
6. Review the TECH 4390 Internship to determine how we can both lengthen it, while at the same time allowing students to participate in this activity earlier in their degree program as has been suggested by the CAB.
7. Offer more certifications to majors along with increasing the scholarship money available to them.
8. Increase the scholarly activity among our tenured and tenure-track faculty to include grants, research and journal publications.
9. Increase our "Alumni and Industry Outreach" and our "Fundraising" activities.

2. State specific plans for implementation of program changes emanating from the modifications to goals and outcomes described above.

Following is our plan to implement the nine (9) changes mentioned above:

a. Our Final Self-Evaluation Study will be sent to ACCE on or before May 1, 2012, with a tentative site visit anticipated for the Fall 2012, with ACCE accreditation of the program to follow.

b. We plan to increase the project based learning activities by 50% in all appropriate construction courses. In addition, we plan to double the number of construction documents used in CSM classes, along with increasing guest speakers and field trips by 25% over the next five years.

Progress will be monitored by comparing the current number of project-based learning activities, construction documents, guest speakers and field trips incorporated in each CSM class, based on a Spring 2012 course survey, to the observed increase in those metrics over time, based on the results of subsequent course surveys.

c. We will concentrate on developing our younger faculty. Two are on tenure track and two senior lecturers are working towards their terminal degrees. Guidance is provided through the yearly Personal Professional Objectives (PPO's) faculty evaluation process. Each year all faculty members submit to the chair a set of PPO's for his review. Also submitted is an annual summary of accomplishments for the preceding year. Based on these materials the chair provides feedback to faculty members regarding their continuing professional development. This process is described in greater detail in an earlier section of the Final Self-Evaluation Study.

d. We plan to attract a more diverse student body, with particular emphasis being placed upon recruiting women and Hispanics. Hispanics are an important minority since the university is currently a "Hispanic Serving Institution", which means 25% or more of the student body consists of this minority group. Also, both the state of Texas, and the Construction Industry in Texas have a strong Hispanic population. To accomplish this, the department will work closely with the Admissions Office on a plan to attract at least 25% Hispanics to the major, along with another 10% women and other minority populations over the next five years. The Department of Engineering Technology is fortunate to have three female faculty members teaching in the CSM program. The prominence of women in our faculty should aid in the recruitment of young female students into what has traditionally been a very male dominated field of construction.

e. We will also carefully monitor the success of the new BS in Construction Science and Management Degree, which was offered for the first time during the Fall 2010 semester. The CSM Degree replaced the former Bachelor of Science in Technology Degree with a major in Construction Technology. The two items we will carefully monitor are enrollments and attrition rate of CSM majors after they have completed the 30 hour sequence of the Pre-Construction Curriculum. This curriculum requires students to complete all required math and science courses along with four (4) specific construction classes, before they will be permitted to enroll in upper division

courses in the major. (See University Catalog for Pre-Construction Curriculum courses).

f. The department faculty will closely review two key aspects of the current internship, TECH 4390.

For many years, we have required that students complete 75 hours toward their degree, including 60 hours of specific prerequisite courses, before serving their internship. This has had the effect that almost all students have served their internships during the summer of their senior year.

Recently, we have been advised by all of our Industrial Advisory Boards, most prominently the CAB, to reduce significantly these pre-requirements, in order that students might be able to serve their internship at a much earlier point in their academic career. The thought being that interns who have been witness to the "real world" of construction, and who bring that exposure back with them for their last few semesters at the university, will make more well-informed students who are better able to integrate their academic preparation with the professional world that awaits them upon graduation.

Currently, our Internship course, TECH 4390, requires that students work a minimum of 23 days and 184 hours with a discipline-appropriate industrial employer. Changing the length of the internship is another recommendation of our Advisory Boards (across all industries). In the real world of production/construction, five weeks represents a quite brief interval of time. Very little of substance can be accomplished with an intern who serves with a company for just 23 days. In the case of many employers, mandatory company orientation may consume the first full week of employment, thereby reducing the effective internship to only four weeks. The CAB has strongly suggested that we consider lengthening our internship to span the entire summer term, which would consist of a ten-week interval rather than the current five weeks.

The department has already embarked upon a course that would put both of these recommendations into effect, but like all such curriculum changes, it will take us a full year before either change can be realized. Upon full implementation, we will monitor the effect of these changes on the quality of the internship itself, but more particularly, on the enhancement this may bring to the readiness of juniors and seniors for their upper division course work.

g. We plan to add more certification offerings for interested CSM students. These certifications will include the OSHA 10 and 30 hour Construction Safety Certificates, AIC (American Institute of Construction) "Level I Associate Constructor" certificate, and the LEED "Green Associate" certificate through the United States Green Building Council (USGBC). To accomplish the above, we plan to work through the Austin AGC and/or ABC Chapters to offer the OSHA 10 and 30 hour courses. In addition to the OSHA certifications, we are exploring becoming a AIC testing center, which will facilitate our students taking the "Level I Associate Constructor" exam. Also, we will provide information on completing the LEED, "Green Associate" certification, which is offered both online and at specified testing centers. We plan to offer all four certifications in the next five (5) years.

h. Scholarship, including grant activity, is important to both the faculty member, in terms of achieving tenure and promotion, and to the university.

We plan to work closely with all tenure track faculty to meet the departmental standard of publishing one to one-and-one- half refereed articles per year accompanied by grants and other professional publications. We will provide them guidance through the vehicle of annual faculty evaluations.

i. We plan to work through the Alumni Office to reach graduates of the Construction Program. In addition to staying in touch with our alumni, we will continue our outreach to professional organizations we are affiliated with including ABC, AGC and NAHB. We will also continue our outreach to employers.

We currently use three methods to stay in contact with construction alumni. The first method is the publication of the twice yearly departmental newsletter. This newsletter updates recipients as to what is happening in the department along with informing them of future events in which they may wish to participate. Second, the Construction Student Association (CSA) holds a student/alumni homecoming tailgate party during the fall. This event allows alumni to reconnect with the university and, in particular, the construction program and its students. The third method is through the Alumni Survey, which is administered every third year. This provides the department with critical information from alumni on their perception of the department, along with providing us with a means to stay in contact.

We want to continue our outreach to professional organizations that we are currently affiliated with. By doing so, we can accomplish three things: 1) These organizations can provide employer contacts for our students seeking internships and full time employment. 2) We can use these organizations to provide certification opportunities for our majors such as the OSHA 10 and 30 hour certification classes. 3) Our faculty can assist these organization and their associated members with continuing education training they may need.

We also want to continue and expand our outreach to construction and construction related employers. There are three main methods we use to stay in contact with this group. First, we hold two specific Construction and Concrete Job Fairs each year in October and February. Currently, we have 100 employers on the invitee list and have had as many as 30 employers attend this event. Our goal is to expand the invitee list to 150 companies and expand the number of companies attending the event to 35. If we go above 35, we will need to seek a larger facility. Second, we stay in contact with industry through the 12 CAB members. We hold two meetings per year, which are typically held the day before each job fair. This has been a very valuable relationship for the program because it allows industry to have input into the CSM program and it provides the program and associated faculty with continued contact with the industry. Currently, there are no plans to expand the CAB beyond the current 12 members, but we will continue to work with the CAB to expand the role they play in the department. We currently plan to work with them on modifying the TECH 4390 Internship Program, establishing a $25,000 Endowed Scholarship and to establish a “Professional Faculty Appointment”. The final means of outreach to construction employers is through our internship program. This allows industry to

educate and mentor our students along with providing valuable input on our program. The internship also provides faculty with a means to stay connected with industry, since they are required to make a site visit. Our plans are to increase the time students spend interning from the current 23 days and 184 hours to 50 days and 400 hours and we also plan to reduce significantly the current pre-requirements, in order that students might serve their internships at a much earlier point in their academic career. These changes are based on input from our CAB.

C. Actions to Address Prior Cited Weaknesses (For Renewal of Accreditation Studies only)

For programs seeking renewal of accreditation, state any actions taken to address program weaknesses cited in the previous Visiting Team report.

N/A

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.

General information concerning the university is published in the Undergraduate Catalog which is printed every two years and available both in hard copy and online. Updates to the catalog will appear in the catalog addendum which is only available online at: www.txstate.edu/curriculumservices/catalogs/undergraduate/catalogs.html Information found in the catalog that would be of interest to the general public and students seeking to enroll in the university include:

- University Mission Statement
- Shared Values Statement
- Student Rights and Privileges
- Admission Requirements to the University
- Important Dates

Specific information about the BS in Construction Science and Management can be found under the "Department of Engineering Technology". This information includes the specific CSM four (4) year curriculum, which specifically shows what classes are recommended to be taken each semester. In addition, other information related to the degree is given, including the Pre-Construction curriculum courses, writing intensive hours required for the degree, specific degree-required general education core curriculum classes and a statement regarding the foreign language requirement. Catalog descriptions of all degree-required courses also appear in this section of the catalog.

The CSM program uses the Department of Engineering Technology's website (www.txstate.edu/technology) to post specific information which would be of value to the public. This information includes:

- Accreditation Information
- Construction Advisory Board
- Courses Offered through the Department
- Faculty
- Construction and Concrete Job Fair Information
- Laboratory Information
- CSM Mission Statement
- Departmental Program Outcomes

Also, the ACCE Final Self-Evaluation Study will be posted to the Departmental website. This document will provide valuable information about the program to the public concerning:

- Enrollment Numbers
- Probation Rates
- Students that make the Dean's List
- Attrition Rates
- Specific Degree Requirements
- Job Placement Rates

Texas State University requires annual review of all academic programs, from a student learning perspective, for the purposes of the Southern Association of Colleges and Schools (SACS) accreditation process. This annual review is administered through the office of Academic Development and Assessment (ADA) and the evaluative results are posted to the ADA web site at the conclusion of each academic year (i.e., in May of each year). (http://www.ada.txstate.edu/)

Because this annual program assessment is required by the university, the Department of Engineering Technology made a decision to unify the ACCE and SACS assessment processes for our Construction Science and Management program. We believe that the unification of these processes will lead to efficiencies in annual program assessment and that the incorporation of ACCE assessment into the usual ADA methodology will assure consistency with established, campus-wide assessment standards.

Academic Development and Assessment requires that all academic programs develop several broad, program-level learning outcomes, which must be assessed each year. Under the ADA process, each of these program outcomes must be assessed using at least two methods of assessment, and these methods must be based upon observable student performance standards. In September of each year, these program outcomes and the associated methods of assessment are posted to the ADA web site by the department Chair. At the conclusion of the academic year, faculty must assess whether or not student learning has satisfied adopted standards, and in those cases where performance is below established minimums, an action plan must be developed. The Chair then collects student performance data from the faculty, and based upon faculty input, he prepares the annual report and improvement plan, which is published on the ADA web site.

General information about the processes and procedures administered through the office of Academic Development and Assessment can be found on ADA's home page

(http://www.ada.txstate.edu/). The annual assessment report and improvement plan developed by the department chair is located on a password-protected site linked to ADA's home page. Hard copies of last year's annual report (i.e., for AY 2010-11) and of the as yet unfinished report for AY 2011-12 have been provided in Appendix L and L_1. The 2011-12 report will have been completed by the time of the accreditation site visit, and this report will be provided to the ACCE review team at that time.

The Texas Legislature passed House Bill 2504 to provide the "Public Access to Course Information". To comply, the university has created its own House Bill (HB 2504) website, which is located at http://hb2504.txstate.edu/.
On this website, you will easily find the following four (4) items:

1. for each undergraduate classroom course offered for credit by the institution, a syllabus and a curriculum vita for the instructor of record;
2. for each academic department, a departmental budget report;
3. for work-study employment opportunities, a link to current job openings; and
4. summarized end-of-course student evaluations of faculty for each undergraduate classroom course

The website also provides more detailed information under the following eight (8) headings:

1. Online Syllabus Requirement
2. Curriculum Vitae Requirement
3. Departmental Budget Report Requirement
4. Work-Study Employment Opportunities
5. End-of-Course Evaluations Requirement
6. Web Site Requirement
7. Responsible Administrator
8. Cost and Usage Patterns

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 purpose of the academic quality assurance plan is to insure that there is a system in place to continually improve the CSM program, including faculty and students.

A quality assurance plan must start with a mission statement that provides a clear direction for the program, including specific goals and objectives that provide guidance on how the program's mission will be accomplished.

The CSM faculty and CAB review the mission statement and associated goals and objectives annually to be sure the program is moving forward and to identify whether changes need to be made. Once every five years, the mission statement is reviewed in earnest and new goals and objectives are created for the next five years. These goals and objectives take the form of a Strategic Plan. The 2012-2017 Strategic Plan can be viewed in Appendix S.

Quality indicators include CSM graduates' satisfaction with the program, alumni satisfaction, employers' satisfaction with the performance of our graduates, internship construction supervisor's satisfaction along with student success in the Capstone Course. In addition, an ACCE accredited program may be the best overall indicator of a Quality Program.

X. APPENDICES

Appendix A CSM Faculty Resumes

Appendix B Course Outlines (Syllabi)

Appendix C Degree Audit

Appendix D Alumni Survey Results (Graduating Seniors) Examples for 2010 and 2011

Appendix E Course Outcomes Assessment – Student Self Evaluation Study

Appendix E_1 Instructor's Course – Assessment and Improvement Plan

Appendix F Composite Performance and Merit Evaluation Rating and Calculation Worksheet (Both for tenure/tenure track and non-tenure-track senior lecturers)

Appendix G TECH 4390 Internship, Final Self-Evaluation of Internship Assignment (Student)

Appendix G_1 TECH 4390 Internship, Learning Outcomes Assessment Student Self Evaluation

Appendix G_2 TECH 4390 Internship, Learning Outcomes Assessment – Industrial Supervisor's Evaluation

Appendix G_3 TECH 4390 Internship, Company Supervisor's Evaluation of Intern (Final Evaluation)

Appendix H Program Assessment Report

Appendix I Construction Science and Management with Business Minor – Flow Sheet

Appendix J Faculty/Classroom Evaluations

Appendix K Student Reaction to Instruction and Course

Appendix L 2010/2011 Academic Program Student Learning Outcomes Assessment (SACS)

Appendix L_1 2011/2012 Academic Program Student Learning Outcomes Assessment Template (SACS)

Appendix M TECH 4360, Grading Criterion (Senior Capstone Course)

Appendix N Construction Advisory Board Minutes from 10/26/11 and 3/28/12 Meetings

Appendix O Construction Advisory Board CSM Course Rating Sheet

Appendix P Construction Alumni Survey

Appendix Q Employer Evaluation of Texas State University Construction Science and Management Employee

Appendix R Departmental Program Outcomes with associated Course Outcomes Matrix

Appendix S Construction Program Strategic Plan for 2012-2017