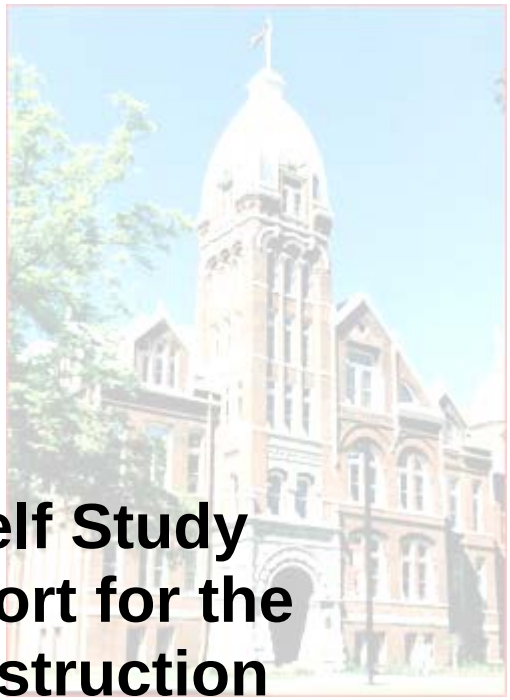
Central Washington University



A Self Study Report for the Construction Management Program

American Council for Construction Education
Fall 2014
Volume 1

CWU Central Washington University
LEARN. DO. LIVE.

AMERICAN COUNCIL FOR CONSTRUCTION EDUCATION

Self-Evaluation Study
Fall 2014

Volume 1

A Self-Evaluation Study

Submitted by:
Central Washington University
Construction Management Program

For the Educational Degree Program of:
Bachelor of Science in Construction Management

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I. INTRODUCION

I. INTRODUCTION

A. Accreditation

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

   The University is accredited by the Northwest Commission on Colleges and Universities (NWCCU)

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

   If yes, describe: The Construction Management Program is accredited by the American Council for Construction Education (ACCE)

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

   Accreditation Board for Engineering Technology (ABET)
   American Chemical Society (Committee on Professional Training) (ACS)
   American Council for Construction Education (ACCE)
   American Dietetic Association Commission on Accreditation for Dietetics Education (CADE-ADA)
   Aviation – Federal Aviation Administration (FAA)
   College of Business – Association to Advance Collegiate Schools of Business (AACSB)
   Committee on Accreditation of Educational Programs for the EMS-Profession (CoEMSP)
   Council for the Accreditation of Counseling and Related Educational Programs (CACREP)
   Education – Public Education Standards Board (PESB)
   Education – Washington Student Achievement Council (WSAC)
   Foreign Languages – Modern Language Association (MLA)
   Dietetics – Academy of Nutrition and Dietetics (AND)
   Dietetics – Academy of Nutrition and Dietetics Accreditation Council for Education in Nutrition and Dietetics (ACEND)
   Foundry Education Foundation (FEF)
   Music – National Office for Arts Accreditation (NASM)
   National Alliance of Concurrent Educational Partnerships (NACEP)
   National Association of School Psychologists (NASP)
   National Collegiate Athletic Associations (NCAA)
   Nutrition – Commission on Accreditation for Dietetic Education (NSC)
   Nutrition – (ADP)
   School Administration – Public Education Standards Board (PESB)
   School Counselor – Public Education Standards Board (PESB)
   U.S. Government Printing Office Federal Depository Library Program (U.S.GPOFDLP)

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.)

HISTORY

Central Washington University is one of six state-supported institutions offering baccalaureate and graduate degrees. The University has its own governing board, the board of trustees, with eight members, seven of whom are appointed for six-year terms by Washington's governor with consent of the state Senate, and one student trustee, appointed annually. Central was established in 1890 as Washington State Normal School by the first legislature to fulfill the intent of the 1889 Enabling Act for Statehood. Mr. Benjamin Franklin Barge was the first principal of the school, which was founded to educate future elementary and junior high teachers. In 1891, doors opened for classes. Ellensburg Normal School became Central Washington College of Education in 1937, Central Washington State College in 1961 and Central Washington University in 1977. In the fall of 2011 Central Washington University launched its online campus to enable people to complete degrees online.

MISSION

Central Washington University's mission is to prepare students for responsible citizenship, responsible stewardship of the earth, and enlightened and productive lives. Faculty, staff, students and alumni serve as an intellectual resource to assist central Washington, the region and the state in solving human and environmental problems.
Qualified faculty and staff create a community that encourages and supports the emotional, personal and professional growth of students from a variety of backgrounds. The University works with community colleges through University centers across the state and employs technology to extend the reach of its educational programs.

The University community values teaching as the vehicle to inspire intellectual depth and breadth, to encourage lifelong learning and to enhance the opportunities of its students. The faculty develop and strengthen bachelor's and master's degree programs in the arts, sciences and humanities; teacher education; business; social services; and related specializations. A strong liberal arts foundation; applied emphases; opportunities for undergraduate research, creative expression and international study; and close working relationships between students and faculty are hallmarks of the undergraduate experience. Graduate programs develop partnerships between faculty and students to extend scholarship to important areas of research and practice.

SIZE

The main campus is located in Ellensburg, Washington and is approximately 380 acres in size. In addition there are three university centers located on the east side of the state in Yakima, Moses Lake and Wenatchee, and five on the west side, in Des Moines, Everett, Kent, Lynwood, Mount Vernon and Pierce County.
As of fall 2013 there were 10,170.12 FTE undergraduate students and 446.10 graduate students for a total FTE of 10,616.22. The total head count as of fall 2013 was 12,343 full and part-time students. Central offers over 150 undergraduate major degree choices, in addition to numerous specializations options within the degrees. Currently there are over 694 faculty members at Central Washington University.

PURPOSE

The purpose of the University may be described by the following "Mission", "Core Values" , "Vision", and "Strategic Plan", as indicated in the University catalog:

Mission

The mission of Central Washington University is to prepare students for enlightened, responsible, and productive lives; to produce research, scholarship, and creative expression in the public interest; and to serve as a resource to the region and the state through effective stewardship of university resources.

Qualified faculty and staff create a community that encourages and supports the emotional, personal, and professional growth of students from a variety of backgrounds. The university works with community colleges to establish centers throughout the state and employs technology to extend the reach of its educational programs.
The university community values teaching as the vehicle to inspire intellectual depth and breadth, to encourage lifelong learning, and to enhance the opportunities of its students. The faculty develop and strengthen bachelor's and master's degree programs in the arts, sciences, and humanities; in teacher education; in business; in the social services; and in technological specializations. A strong liberal arts foundation; applied emphases; opportunities for undergraduate research, creative expression, and international study; and close working relationships between students and faculty are hallmarks of the undergraduate experience. Graduate programs develop partnerships between faculty and students to extend scholarship to important areas of research and practice.

Core Values

Central Washington University exists to advance society through the essential activities of teaching, discovery, and service. While no one of these core elements is meaningful in isolation from the others, CWU finds it necessary to prioritize its efforts in relation to its mission, vision, values, goals, and resources. In order to maximize the value of each of the elements of its mission, CWU emphasizes the integration of scholarship, teaching, and public service.

As a public comprehensive university, CWU strives to create an engaging learning environment and therefore places its highest priority on teaching, learning, and student success. The faculty is comprised of scholar-teachers working in the interests of their students, their disciplines, and the region. CWU encourages individualized

programs of student success and promotes undergraduate and graduate student-faculty partnerships that are actively engaged in discovery, creative expression, and engaged learning.

As a community dedicated to the principles of academic freedom, CWU must be an environment that promotes reasoned, civil, and enlightened discourse and creative expression without fear of reprisal, ridicule, or exclusion. CWU's educational environment must empower each person with the freedom to explore, to evaluate, and to learn.
CWU must also strive to serve its region by addressing pressing economic and social issues. As a comprehensive university, CWU must use its intellectual capacity not only to contribute to disciplinary literatures, but also to assist area business, social, and government leaders in strengthening and diversifying the area's economic base, to help create a sustainable natural environment, and to address critical social issues.
CWU is also a place where people gather to live and to work. It must therefore be a place that enables people to grow and to prosper. In keeping with the academic values of shared governance and reasoned dialog, the university must be open, transparent, and empowering.

As a community of scholars, we are committed to the following shared values:

- **Student success:** CWU believes that student success is best achieved by providing supportive learning and living environments that encourage intellectual inquiry, exploration, and application. CWU believes that learning is best achieved in small classroom or group settings with ample opportunities for individualized instruction, mentoring, advising, and programming.

- **Access:** CWU believes in providing educational opportunities to as many qualified students as possible. CWU believes that restrictions of place, time, and finances can be overcome through the effective use of partnership with community colleges and by effective and efficient use of learning, communication, and social technologies.

- **Engagement:** CWU believes that learning, research, and creative expression are enhanced by engagement with external partners. CWU believes that as a publicly-funded institution, it has a responsibility to help address the social and economic challenges faced by our communities. A rigorous curriculum and outstanding teaching.

- **Inclusiveness:** CWU believes that diversity of peoples, cultures, and ideas is essential to learning, discovery, and creative expression. CWU believes that all faculty, staff, and students must be and must feel physically, professionally, and emotionally safe in order to fully engage in and benefit from the university experience.

- **Shared governance:** CWU believes that shared governance is most effective when information systems and decision-making processes are both robust and transparent. CWU believes that communication channels should be open and two-way and that faculty, staff, and students should be empowered to participate in the governance systems.

- **Facilities:** CWU believes that state-of-the-art, safe, and attractive facilities enhance the working and learning environments of faculty, staff, and students. CWU also believes that state-of-the-art technologies provide leverage for the efforts of faculty, staff, and students.

- **Safety:** CWU believes it has a responsibility to providing a working and learning environment that is both physically and emotionally safe. CWU believes this responsibility extends to the off-campus environment of its full-time, residential students.

Vision

Central Washington University (CWU) is a dynamic, creative, and inclusive environment that promotes engaged learning and scholarship. It is distinguished regionally for the rigor of its curriculum and scholarship, for the excellence of its pedagogy, for the vibrancy of its co-curricular and residential experiences, for its commitment to providing access to higher education, and for its efforts to advance the social and economic health of the region. It is typified by an entrepreneurial spirit that establishes it as a national leader in higher education. It has a strong commitment to engaged learning and scholarship, internationalism, sustainability, inclusiveness, and life-long learning.

Core Themes	
Teaching and Learning:	Student success is the highest priority of the university, and achievement of programmatic student learning outcomes is the prime measure of that priority.
Inclusiveness and Diversity:	CWU is committed to providing all faculty, staff, and students a diverse working and learning environment built on principles of respect, support and encouragement as a way to achieve individual and collaborative excellence.
Scholarship and Creative Expression:	CWU is committed to the creation, dissemination, and preservation of knowledge through research, scholarship, and creative expression.
Public Service and Community Engagement:	As a publicly funded institution, CWU is committed to serve external communities for the mutually beneficial exchange of service, knowledge, and resources.
Resource Development and Stewardship:	CWU will sustain an environment that supports the mission of the university, CWU must rely less on state financial support and more on revenues generated through its core operations and its auxiliary functions.

ORGANIZATIONAL STRUCTURE

The University is governed by an eight member Board of Trustees, seven of whom are appointed for six-year terms by the governor of Washington State with the consent of the state Senate, and one student trustee, appointed annually. University administration consists of a President, Provost/Vice President of Academic and Student Life, Vice President for Business and Financial Affairs, Vice President of Operations and Director of Athletics. On the academic side there are deans of four colleges:

- College of Arts and Humanities
- College of Business
- College of the Sciences
- College of Education and Professional Studies

There is also a Dean of Library, Office of Continuing Education, Undergraduate and Graduate Studies, Science Honors Research Program and William O. Douglas Honors College. For more detail see section II of this report, Organization and Administration.

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 AND HISTORY

The Construction Management Program was conceived and originally developed in the mid-1970's as a response to an industry need that the Industrial and Engineering Technology (IET) Department could best satisfy. Since first appearing in the 1977-1979 university catalog, the program curriculum has undergone a number of major and minor revisions. The first major revision occurred in 1983/84 and the second in 1990. Minor revisions took place in 1993, 1994, 1997/98 and 2002. Another major change took place when the "Heavy, Civil and Highway Construction" option was approved and included in the 2005-2006 university catalog. This option gives students two curriculum choices; they may pursue "General" or "Heavy/Civil" construction as they work toward their degree. During this time, a minor change also took place when the construction management program required students to sit for the American Institute of Constructors (AIC) exam and pass the exam with a score of 60% or better to graduate with a degree in Construction Management. These revisions have been designed to satisfy ACCE guidelines and to maintain a quality program that meets the needs of the students and the construction industry.

The program began by hiring adjunct instructors. The first full-time tenure track faculty member dedicated exclusively to the program was approved and hired in 1983. This faculty member left the university two years later and was replaced by the current program director in 1986. As the program grew the need to add another faculty member became apparent and in 1991 a second tenure-track faculty position was created with financial support from the Associated General Contractors of Washington. Until the fall of 2004 the program was assigned three full-time tenure-track positions, one of which was shared with another program in the IET Department. In the fall of 2004 this third position was assigned full-time to the Construction Management Program. More recently a fourth tenure-track position was created to coincide with the offering of the heavy/civil construction option. This fourth position was created through a high demand grant from the Washington State Higher

Education Coordinating (HEC) Board. In addition to these four full-time tenure-track positions, part-time lecturers are available through an endowed professorship position. This position was created with the help of a matching-funds grant from industry and the State of Washington.

Since the last accreditation visit in the Spring of 2009, a new addition and remodel to the existing Hogue Technology Building was designed and built and the department name changed. The motivation to design and construct a new building came from the fact that the old Hogue Technology Building was beyond its service capacity, there were too many programs, students, and faculty in a small building and there was no space for new equipment that could be used to update labs to current teaching models. Also, the economic trends during 2008 to 2011 fostered a unique environment where construction costs were low and allowed the stakeholders to get more building with a limited capital budget.

One purpose of the new building was to adapt to a newer style of learning by offering classes in a hands on living learning laboratory environment. Therefore, the building was built as a living learning laboratory for the type of technical instructional pedagogy that is performed inside the building. Mechanical, electrical, structural and other systems were left exposed to facilitate student learning. For example, students learning estimating perform a material takeoff of the structural steel. If a student has doubt about a construction detail shown in the plans, the student can generally see the physical detail inside the building. This building is also being used as a model by CWU's facilities department to test sustainable features that could be incorporated into future capital projects on campus (i.e., solar panels, wind turbines, and reflective mechanical heating panels).

More specifically for the Construction Management program, a new building provides additional lab space and storage for the various program equipment utilized in the labs. The two labs created additional space for the materials science courses, mainly soils, concrete and asphalt. Within these labs newer and additional equipment was procured to assist in the development of the CMGT 461 Pavement Engineering and Construction lab for the Heavy Civil option. Both labs created a naming opportunity for industry to offer scholarships and provide equipment necessary to teach classes within the lab. The two labs that were created included dirty and clean lab space for teaching. The dirty lab is where students learn about properties and mechanics of soils, concrete and asphalt. Opposite the dirty lab, a clean lab was also developed to teach students in the lab about electrical and mechanical systems. These two labs are further utilized as staging areas with other courses including surveying, competition preparation and company demonstrations within the courses.

With the construction of the new building complete in 2011 the name of the building also changed to Hogue Hall. With the building name change, the department name changed to Engineering Technologies, Safety and Construction (ETSC) to better reflect the teaching programs within the department. The name change also made it clear that the Construction Management program is a major program within the ETSC department. By adding "Construction" to the department name this addressed an area of "Undeveloped Potentials" as noted in the visiting team's comments during the program review in 2009. Additionally, the name change has provided greater visibility for those searching for information about the program via the web.

MISSION AND GOALS

The primary mission for the Construction Management Program is to provide the highest possible quality general construction education to undergraduate students who are preparing for careers in the construction industry.

The secondary mission is to maintain ongoing contact with the construction industry and to provide support for this industry.

The Major Program Goals Are:

- Goal A: Improve the quality of instruction within the program
- Goal B: Provide support for the construction industry
- Goal C: Measurably improve the overall quality of the construction program
- Goal D: Support professional development for program faculty
- Goal E: Improve the newly-established heavy/civil construction option within the program

Detailed objectives and assessment strategy are contained in part 2 below and in Section IX, Program Quality Assessment, of this report.

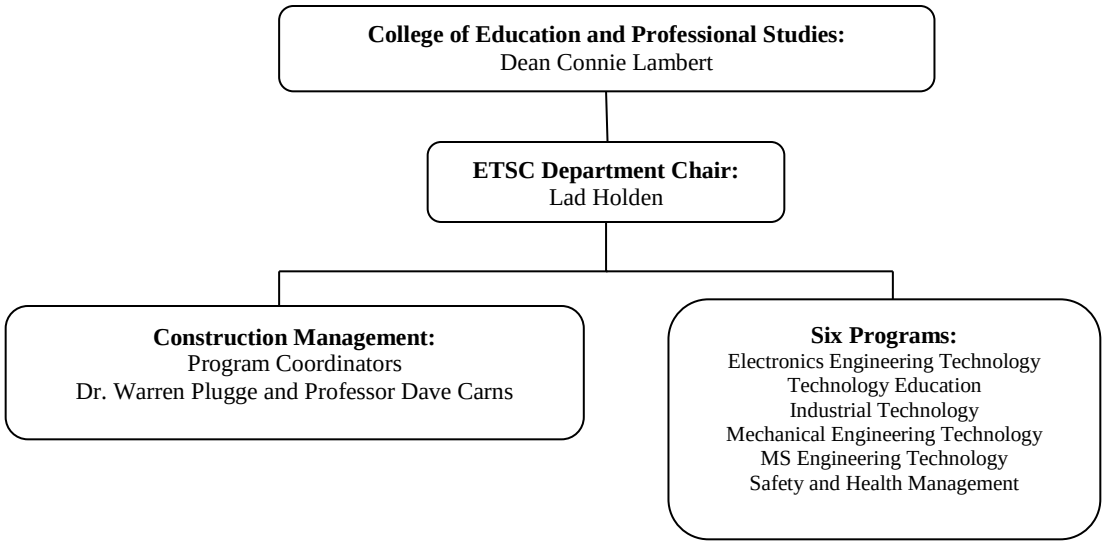
CURRENT SIZE

Each fall quarter 36 new students are allowed to enter the program as majors at the junior level. This means that during any academic year there are approximately 72 Construction Management majors. Prior to applying to the program many students declare "pre-major" status. These are students who either have not completed the

prerequisites for entering the program or, for various other reasons, are not ready to apply. There are approximately 60-80 Construction Management pre-majors. Currently three and a half tenured/tenure-track faculty members are dedicated full-time to the program. The purpose for the half time position is due to one of the faculty members whom is on a phased retirement cycle. An additional half time position will be added with the incorporation of the new chair who will split time between the Department Chair position and teaching half time in Construction Management.

ORGANIZATIONAL STRUCTURE

The Construction Management Program coordinated by Dr. Warren Plugge and Professor David Carns. The program is one of seven major programs within the Engineering Technologies, Safety and Construction (ETSC) Department. The ETSC Department is chaired by Lad Holden and is one of eight departments within the College of Education and Professional Studies (CEPS). Section II A of this report contains a more detailed organizational chart.



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.

Listed below are both the near and long term objectives of the CMGT Program as they relate to the program mission and goals.

On a larger scale, the Construction Management Program has developed a comprehensive assessment program that coincides with the university's assessment plan, the college's assessment plan and the department's assessment plan and is based on the goals and objectives of the Construction Management Program. This assessment program consists of two primary components: 1. Student Learning Outcomes Assessment and, 2. Program Outcomes Assessment.

The goals and objectives are integral parts of a comprehensive assessment program that has been initiated and implemented within the CMGT program at Central Washington University. This assessment process is intended to monitor the quality of the program, identify areas that need improvement and provide feedback that allows these changes to be implemented and recorded. This process is the responsibility of the department chair and all faculty members involved with the program but the program coordinator creates an annual report, due in November of each academic year that presents the data collected, interpretation of the data and the specific results and changes that were made to the program. Copies of this report are included in Volume II of the self-study. The assessment process is described in additional detail in Section IX A, Program Quality Assessment, of Volume I of this report.

Objectives:

Goal A: Improve the quality of instruction within the program

1. Continue to revise existing courses on a three-year cycle, based partially on industry review and recommendations.
2. Maintain small class size with an average enrollment of 25 students and a maximum enrollment of 35 to 40 students in the CMGT courses.
3. Continue to offer a Leadership in Energy and Environmental Design (LEED) course.
4. Add a course focusing on Building Information Modeling (BIM) to meet current industry standards.
5. Hire a new full time tenure track Construction Management position to replace faculty who will retire.

Goal B: Provide support for the construction industry

1. Present two programs or seminars per year for the architectural/engineering/construction industry or assist with two workshops or short courses in conjunction with established industry organizations such as AGC(Associated General Contractors)/ASCE(American Society of Civil Engineers)/AACE(American Association of Cost Engineers).
2. Place a minimum of 90% of graduates in responsible positions in the construction industry.
3. Bring a minimum of 40 employers on campus to interview students for jobs each year.
4. Achieve an overall employer satisfaction rating of 80% or better for CMGT graduates, as measured through an employer survey.

Goal C: Measurably improve the overall quality of the construction program

1. Improve the overall level of general construction knowledge of seniors in the program with a minimum of 70% of the seniors passing the AIC(American Institute of Constructors) Level I exam and a minimum average score for all seniors of 70%.
2. Continue efforts underway by the Construction Management Advisory Council. These efforts include:
   - Fund-raising with the ultimate goal of creating a Council budget that is self-sustaining.
   - Sponsor annual alumni/contractor events.
   - Conduct two meetings per year to provide advice on curriculum, program needs, etc.
   - Publish two or three "Building Times" newsletters per year.
   - Continue industry and university relations efforts for the program.
3. Provide at least one community service project each year through Sigma Lambda Chi, the AGC Student Chapter, MCAWW (Mechanical Contractors Association of Western Washington) Student Chapter or the NAHB(National Association of Home Builders) Student Chapter.
4. Compete in the Associated Schools of Construction Region VII competition each year. The objective is to place in all categories in which Central competes (commercial, residential, heavy/civil) each year.

Goal D: Support professional development for program faculty

1. Send each faculty member to a minimum of one professional conference per year.
2. Have each faculty member write and publish a minimum of one paper or article per year or write and submit a grant application relative to his/her area of expertise.
3. Continue a faculty internship program where each faculty member can intern with or visit a contractor at their home office or a project site on an annual basis.

Goal E: Improve the newly-established heavy/civil construction option within the program

1. Utilize the earnings from the endowed sum of $500,000 ($250,000 from private industry and a $250,000 match from the state) to hire adjunct help or a part-time tenure-track faculty member to assist with the heavy/civil option.
3. Continue to maintain and develop the highway materials/asphalt lab, in conjunction with CMGT 461, the highway materials adding demonstration or teaching models to further enhance the highway materials/asphalt lab experience by spring quarter 2017.

Shown below is a table that identifies the assessment instruments used by the program, where they are implemented in the assessment process and how data obtained from the process is used to make changes to the program.

Instrument	Description	Where Implemented	Schedule	Feedback	Implementation of Change (Adjustment)
Student Evaluation of Instruction Forms (SEOI)	Standardized evaluations pertaining to course and instructor	Completed by each student in each course in the program	Every quarter, usually in the last week	Summary and individual comments supplied to instructor, ETSC Chair and Dean within three weeks	Faculty member adjusts course delivery/content. ETSC Chair, Personnel Committee and the Dean of CEPS may make suggestions
Continuous Quality Improvement (CQI)	Instructor self-evaluation pertaining to each course	Completed by each instructor at the conclusion of each course	Every quarter	Instructor implements changes	Faculty member adjusts course deliver/content
Exit Questionnaire	Written document completed by graduating seniors in June. Pertains to education and pending employment.	400 level course in the major	Administered each June by the ETSC Chair or Associate Dean	Results are summarized and discussed among the faculty and Chair	Faculty/program director implement change for the upcoming academic year
Focus Group	Chair or associate Dean conducts a focus group survey with all the graduating seniors, designed to identify program strengths and weaknesses	400 level course in the major	Administered each June by IET Chair or Associate Dean	Chair or Associate Dean prepares short written report, results are discussed with program director	Faculty/program director implement change for the upcoming academic year
Alumni Survey	Written survey pertaining to placement, duties, salary, job satisfaction and education at CWU is mailed to all alumni on record that graduated within the past five years		Five year cycle	Detailed report is prepared	Information is shared with the Executive Members of the Advisory Council (re: job placement and salaries) and with program faculty. Helps to identify direction and satisfaction of program and areas that may need improvement
Employer Survey	An on-line survey sent to 20 primary employers of CMGT graduates	Employers	Five year cycle	Detailed report is prepared	Information is shared with the Executive Members of the Advisory Council (re: job placement and salaries) and with program faculty. Helps to identify direction and satisfaction of program and areas that may need improvement
American Institute of Constructors CPC Level I Exam	National Exam designed for seniors/professionals	Required of all seniors as part of CMGT 488, Professional Certification	Administered every March or April	Summary report is prepared and submitted to the program coordinator each June	Results provide comparison with the national averages. These results are arranged by subject, allowing identification of relative strengths and weaknesses
Report of Change Form	Documentation of changes	At all levels	Continuous	Program faculty	Reporting mechanism

II. ORGANIZATION AND ADMINISTRATION

II. ORGANIZATION AND ADMINISTRATION

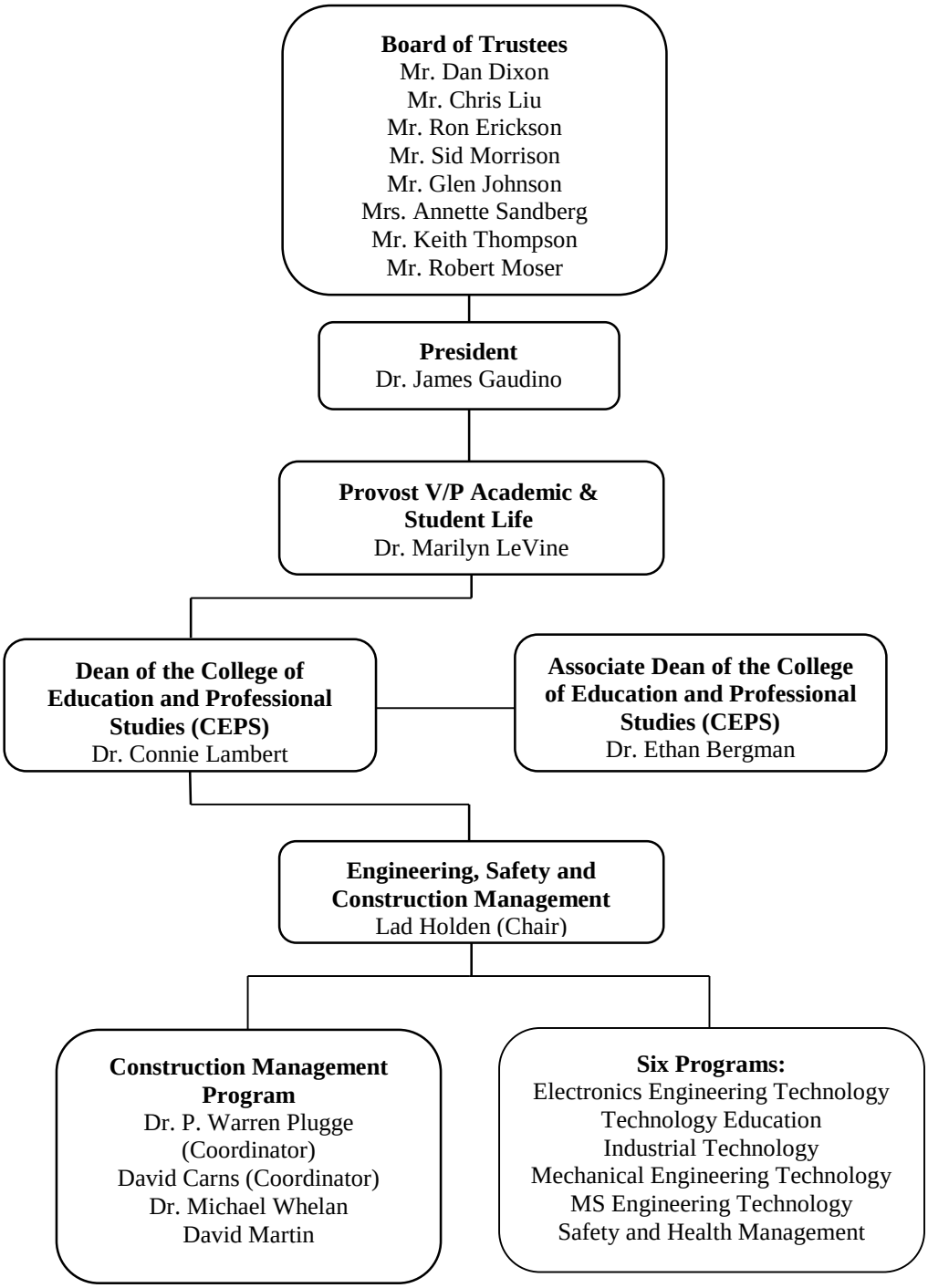
A. Organizational Charts

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

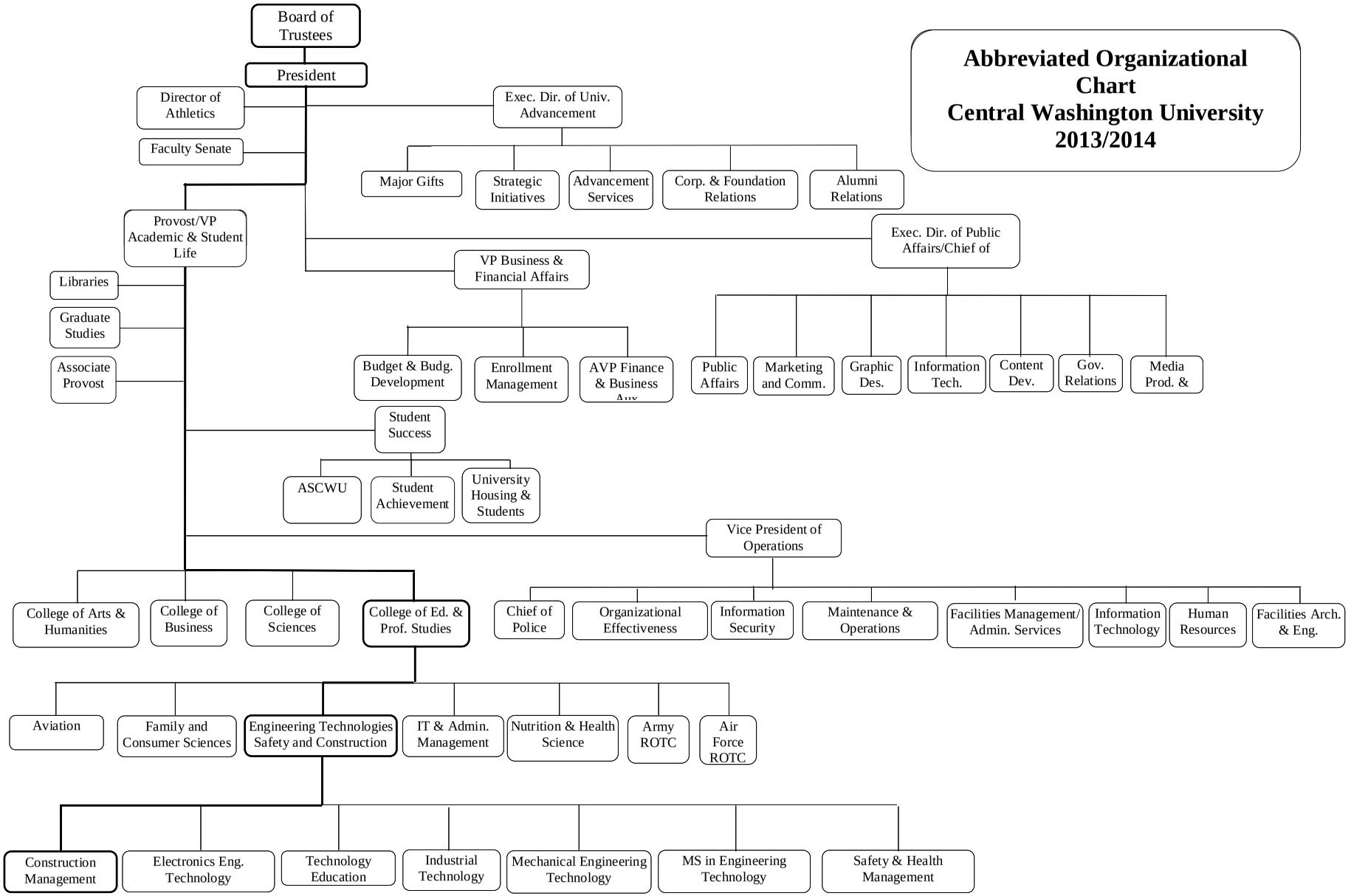
Please see the following page for this organizational chart.

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

A very abbreviated, "chain-of-command" portion of the university's organizational chart, populated with incumbent names, for the Construction Management program is shown below.



Abbreviated Organizational Chart
Central Washington University
2013/2014



B. Construction Unit Administration

1. Administrator of construction unit:

Name of incumbent: Lad Holden (ETSC Department Chair), Warren Plugge (Program Coordinator) and David Carns (Program Coordinator)

Title: ETSC Department Chair (Holden) and Program Coordinator (Plugge and Carns)

2. 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.

Originally developed between 1975 and 1977, the Construction Management Program first appeared as a major in the 1977/1979 CWU Catalog. It has undergone a number of revisions since that time. The first major revision occurred in 1983/84 and the second in 1990. Minor revisions were made in 1993, 1994, 1997/98 and 2002. The significant changes were made in the fall of 2005 when a Heavy Civil Option was implemented within the program. Since 2006 the Heavy Civil option has gained greater focus with the with a faculty member dedicated to the development and implementation of courses and labs.

Development, implementation, and revision of the curriculum most commonly is initiated at the program level by the faculty, often with advice from the Construction Management Advisory Council. Proposed changes originated by the CMGT faculty are openly discussed, modified as appropriate, and approved by the ETSC Department before being reviewed and approved by the Dean of the College and the Faculty Senate Curriculum Committee. New programs proposed for campus must also be approved by the full Faculty Senate, Board of Trustees, and Higher Education Coordinating Board (HECB). Every effort is made to insure that modifications to the CMGT program are implemented with minimal impact on students, use existing courses on campus where possible, maintain balance in faculty teaching loads within the ETSC Department, and respond to changes in industry practices.

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

Procedures for recruiting faculty members for the Construction Management Program are in compliance with the policies of the University's Affirmative Action program, and are essentially the same as for other vacant positions on campus. When a tenure track faculty position becomes available, and approval to fill the position has been obtained from the Dean of CEPS, a search committee is created, consisting typically of one or more CMGT faculty member(s), a CMGT student, and a member of the Construction Management Advisory Council. This committee creates a position announcement, and submits the announcement to Human Resources for approval. The approved position announcement is then advertised on a national level. If the resulting candidate pool is adequate, the screening process begins. This process involves review of each applicant's file by the search committee, telephone interviews (in some cases), and an on-campus interview. The on-campus interview includes meetings between each candidate and the ETSC Department Chair, the Dean of CEPS, and the faculty in the CMGT Program and ETSC Department, as well as making a presentation to CMGT faculty and students. After on-campus visits are complete, the committee ranks the candidates and makes a recommendation to the Chair of the ETSC Department and to the Dean of CEPS. Faculty members in fulltime tenure-track positions are subject to provisions contained in several Articles of the current Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (CBA). A complete copy of the Agreement is available online at https://www.cwu.edu/business/sites/cts.cwu.edu.business/files/09-13_CWU-UFC_Agreement_Final.pdf.

Temporary adjunct positions are filled through discussions between the CMGT faculty, ETSC Department Chair, and Dean of CEPS. Policies pertaining to adjunct employment are contained in several Articles of the CBA.

Teaching loads are assigned by the ETSC Department Chair for the upcoming academic year, following discussion with the CMGT faculty members. A full-time teaching load as defined in Article 14 and Appendix A of the current CBA typically results in each faculty member in the CMGT program teaching the equivalent of three 4-credit courses per quarter.

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

Classrooms are assigned on a quarter-by-quarter basis by the ETSC Department Chair, in consultation with the Construction Management faculty (and other ETSC faculty). The classrooms are located in Hogue Hall on the CWU main campus. Enrollment limits are established for each course, with approval of the ETSC Chair. These limits are managed through the use of special codes available to students only if they meet with their academic advisor prior to registering for a particular course. Typically class size is limited to 40 students or fewer, depending on the course. The lecture portion of most of the CMGT courses is held in Hogue Hall rooms 102, 223, 226, or 227. Other CMGT courses that require specialized facilities, such as surveying, computer labs, soils labs, concrete labs, etc. meet in either room 103, 105, 118 and 120 within Hogue Hall. These courses are sequenced to make the most efficient use of lab space. Since the last accreditation cycle storage specific to the Construction Management Program is conveniently located in room 104 between the dirty lab room 103 and clean lab 105. The storage room also holds many of the tools required to teach CMGT 245 Light Commercial class during the spring quarter. Also, the storage room holds many teaching models used in several courses during the academic year. There are also two dedicated computer labs shared with other programs within Hogue Hall, room 118 holds 25 students and room 120 holds 20 students. Each of the computer labs have a range of construction software programs loaded on the computers for educational purposes. The student clubs also have a room to hold meetings and use for the organization of club activities.

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

Funds for the Construction Management Program are allocated through the ETSC Department Chair based on the annual department budget request submitted to the Dean of the College of Education and Professional Studies. Attempts are made to support the mission and goals of the ETSC Department and CMGT program through the budget process.

Equipment and supplies for the CMGT program are typically obtained by submitting purchase orders to the ETSC Department Chair for approval. These requests are then balanced against requests from other programs in the ETSC Department. Student lab fees are associated with some of the CMGT courses. The money from these fees is used to replace smaller equipment, to replenish supplies used in the course, and to pay for annual software licensing fees. In addition, money from the Construction Management Advisory Council Foundation account has been used to expand labs and to provide a variety of extra services that benefit the educational experience. The Program Coordinator and CMGT faculty administer this account.

Since the construction of the new building naming opportunities have been created for several of the rooms and lab spaces the program uses to teach in. For instance, on the main level an individual donor donated money for to name the intersection between the new and old Hogue building called Bender’s Knuckle. There are also two instructional rooms the Construction Management program uses frequently that have donors with name which include Room 103 known as the dirty construction lab named after Alan Osberg and Room 105 known as the clean construction lab named after the Mechanical Contractors Association of America.

Salaries for faculty are determined initially at the time of hiring based on the candidate's qualifications and experience. Article 8 of the CBA provides some details about the appointment process, and Article 15 of the CBA provides information about compensation and benefits.

An administrative assistant keeps the ETSC Department's financial records in the department office. The ETSC Department Chair is ultimately responsible for the department budget and control of expenditures involving state money. The Construction Management Advisory Council Foundation funds are held by the CWU Foundation and expenditures are monitored and audited through continuous accounting oversight.

e. Evaluation. Evaluation of program effectiveness.

The program is evaluated on a continuing basis through an extensive formalized assessment process, as outlined in section I.C.2, above. This process incorporates the following evaluation instruments:

- Student evaluation of instruction forms. Student evaluations are voluntarily completed in each course by students within Canvas and are returned to the instructor after grades are distributed through Evalkit within MyCWU

- An Exit Questionnaire: A written questionnaire is completed by all graduating seniors in June. The results are summarized in an annual report.

- A Focus Group: All graduating seniors are interviewed as a group by the ETSC Chair or Associate Dean. The information conveyed by this focus group is summarized by the Chair and included in the Summary Assessment Report written by the CMGT program coordinator

- Alumni Survey: Construction management alumni are asked to complete a written survey every five years. The results are summarized and shared with the Advisory Council, program faculty, and other interested parties. This has been an excellent evaluation of program effectiveness because it tracks career growth, records current salaries, and collects informed comments about program content and quality.

- Employer Survey: Information pertaining to employer satisfaction with recent graduates is obtained through an online survey.

- American Institute of Constructors (AIC) Certified Professional Constructors (CPC) Level I Exam: All seniors must take the exam in April and results are reviewed to identify program strengths and weaknesses.

- Summary Assessment Report: This is an annual summary of assessment and changes during the academic year. It is prepared by the CMGT coordinator and shared with the faculty.

- A "Report of Change" form has been created. This form is utilized by faculty to identify specific areas of concern, proposed actions to be taken, and how and when these actions will be reviewed.

In addition there are many other informal indicators of program effectiveness. These include, but are not limited to, positive feedback from alumni and employers, active and repetitive recruitment on campus by quality construction companies, high regard of the program by AGC and other industry organizations, numerous national scholarships earned by CMGT students, and excellent graduate placement. In addition, the program is viewed very favorably on campus by the administrative structure responsible for the program. While these measures are difficult to quantify, they do indicate a strong and effective program.

There is a formalized curriculum review procedure involving members of the Construction Management Advisory Council. Since council members are primarily alumni who are practicing professionals, their review is a strong addition to the evaluation process. The intent is to have all courses reviewed on a three-year cycle.

3. 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.

Because the program faculty is small, the student body is limited in size, and the ETSC Department Chair is actively involved in curricular and accreditation matters, there are numerous opportunities to review program operations and gather feedback information almost continuously. Should a better topic selection, material presentation technique, or improved learning opportunity become evident, current procedures allow for a responsive and responsible reaction to the situation. Innovation and experimentation in learning methods or topics covered can then be implemented in smaller, more continuous steps than a larger, more cumbersome organization would require.

C. Related Programs

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

The program is not presently offered on a multi-campus basis, however a significant number of students transfer from two-year programs and other institutions. At the university level, ongoing relationships are maintained with over 25 community colleges within the state, and transfer agreements have been established between all community colleges in Washington and CWU. Agreements have been specifically developed for closely related two-year transfer programs in the state, such as Civil Engineering Technology and two-year Construction Management programs. In the past, CMGT faculty members have visited many of these programs to assure that a smooth transition exists for transfer students.

Formal provisions for maintaining intra-campus relationships are not extensive. However, representatives from other departments do work closely with the CMGT faculty and the ETSC Department to meet the needs of students in the CMGT program. Examples include welcoming Interior Design students into the blueprint reading and Architectural CAD courses and developing an advanced CAD course for that major, and working with the mathematics, physics, economics, communications, and business faculties to make sure their courses meet the needs of CMGT students.

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

Within the ETSC Department close relationships have been established between allied disciplines and the CMGT program. Because of the small size of the Department, there is frequent contact between faculty and students from the different programs. The Mechanical Engineering Technology (MET) students take the same engineering mechanics classes (statics and strength of materials) as the CMGT students, often sharing project ideas. Faculty in the CMGT program often share ideas and ask for assistance from MET faculty to test materials and to use equipment in the machine and metal fabrication shop. Safety and Health Management (SHM) interfaces with Construction Management several ways. First, SHM teaches a safety course for CMGT students that deals specifically with construction safety. Since the addition of a new SHM program coordinator and faculty member, several programmatic changes have occurred to strengthen the program and learning outcomes. One example, is the addition of safety training models to show construction students the proper procedures on many different safety topics.

In addition, CMGT faculty helped develop and continues to support a Construction Management minor for the SHM Program. The CMGT faculty has also worked very closely with SHM to help develop and mentor a new SHM program coordinator and faculty. Finally, SHM students have presented toolbox safety talks, conducted jobsite safety inspections, and provided safety appraisals to students enrolled in the CMGT 245 – Light Commercial Construction class. Because faculty members from the many disciplines in the ETSC Department work in close proximity to each other, attend department meetings together, and serve on departmental committees, there is an ongoing interaction at that level.

Formally interfacing with faculty in programs outside the ETSC Department often takes place on a more limited basis, usually through faculty interaction on college and university committees. Curriculum Committee actions, Faculty Senate activities, graduate committees, and search committees are examples of formal interactions. The University sponsors a number of social, cultural, and athletic opportunities for faculty to interact informally as well. These "kitchen table diplomacy" opportunities are particularly effective at a smaller university such as CWU.

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.

FIGURE 1 - CMGT OPERATING REVENUE (FY 2014)

Source	Amount ($)	%
Institutional funds (salaries)	$303,006	93%
High demand funds	$0	0%
Endowed professorship earnings	$12,300	4%
Goods and services	$0	0%
Travel	$5,000 *	1.5%
Professional development	$5,000 **	1.5%
Total Revenue	$325,306	100%

* From the ETSC Department budget.

**From CEPS and Provost office

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

FIGURE 2 - CMGT EXPENDITURES (FY 2014)

Source	Amount ($)	%
Faculty salaries	$303,006	94%
Other salaries and wages		0
Expenses (specify)		0
Goods and services	$0	2%
Travel	$5,000	1%
High demand funds	$0	1%
Professional development	$5,000	1%
Total Expenditures	$313,006	100%

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

NONRECURRING FUNDS (FY 2013)

Source	Number	Total Amount
Construction assoc.	2	$6,500
Construction firms	36	$31,830
Alumni	24	$9,355
Faculty	1	$2000
Individuals	6	$3,500
Other	1	$500
Totals	69	$53,685

The nonrecurring funds listed in the table are donations from associations, construction companies and individuals. These monies were donated to the program for a specific purpose, such as student scholarships, ASC competition expenses and identified laboratory needs.

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

Because the major emphasis at the university, college, and department level is on teaching and creating a quality undergraduate educational experience, institutional funding for the CMGT Program is dedicated almost entirely to faculty salaries. This alignment of purposes also ensures that the CMGT Program receives a fair and adequate share of the budget amounts available to successfully pursue realization of the program mission and goals.

Institutional funding for course and laboratory development, faculty travel and development, and other needs not directly related to faculty salaries would likely prove to be inadequate without financial support from industry. However, Central Washington's CMGT Program and its graduates have an excellent reputation with the industry. As a result, companies that hire graduates have provided funding, through the Construction Management Advisory Council, allowing the program to continuously improve its overall quality. For example, expenses associated with sending four teams (24 to 28 students) to the Associated Schools of Construction Region VII Construction Management Competition in Sparks, NV are largely covered by contractor sponsorship. Other examples include the outstanding level of support for student scholarships and for the Heavy/Civil Endowed Professorship campaign.

E. Comparable Program Budgets

Institutional support by the administration of the construction unit should accord status within the institution comparable to that of other academic units of similar size and function with regard to finances. Indicate the amount and percentage of operating revenue and expenditures for units on the campus that are comparable to the construction unit.

Because of the similarity in size and availability of the Safety and Health Management (SHM) Program to the Construction Management Program, the SHM Program was selected to be the comparable program for budget comparison.

FIGURE 3 - COMPARABLE UNIT (SHM) OPERATING REVENUE (FY 2014)

Source	Amount ($)	%
Institutional funds (Salaries)	$121,780	94%
Other		0
Goods and services	$0	0%
Travel	$4,000	3%
Professional development	$4,000	3%
Total Revenue	$129,780	100%

FIGURE 4 - COMPARABLE UNIT (SHM) EXPENDITURES (FY 2014)

Source	Amount ($)	%
Faculty salaries	$121,780	94%
Research	0	0
Other Salaries and Wages	0	0
Other Expenses (specify)		
Goods and services	$0	0%
Travel	$4,000	3%
Professional development	$4,000	3%
Total Expenditures	$129,780	100%

III. CURRICULUM

III. CURRICULUM

A. Educational (degree) Program Description

1. Construction program title:

Construction Management

2. Degree title:

Bachelor of Science, Construction Management

3. Credit hours required for the degree:

Semester hours_____ quarter hours 180*

*The CMGT major requires 131-133 quarter hours per courses in the Construction Management handbook and online catalog. In addition, the students must complete the General Education Requirement for the University (Basic and Breadth Requirements). Depending on the selection of courses, this may add 37 to 85 quarter hours to the CMGT major required total. With proper and timely academic advising, however, the General Education Requirement will total 43 hours. The minimum University requirement for graduation is 180 quarter hours.

4. List program options.

General Building Option and Heavy Civil Option.

5. List other degree programs administered by the construction unit.

None.

B. Institutional Requirements

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

The State of Washington does not establish curricular requirements for the two research and four regional universities in Washington. Requirements are established by each university.

The state legislature has, however, created a Higher Education Coordinating Board (HEC Board) whose function is to create a master plan for the state universities. Board members report to the legislature and governor and are appointed by the governor.

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

Graduation requirements are contained in the University Catalog; a summarized list is presented below:

- A minimum of 180 quarter credits is required for graduation
- A minimum of 60 upper division credits (numbered 300 and above) is required
- Students must study at least three quarters on the University campus or an established center and earn a minimum of 45 credits (residency requirement)
- In addition the University has established a General Education Program, including Basic Skills Requirements (writing, reasoning, computer basics, and foreign language) and Breadth Requirements (arts and humanities, world culture, social and behavioral sciences, and the natural sciences). The purpose is to assure that all Central graduates receive a well-rounded education.

Courses meeting some of the General Education Requirements are also included in the Construction Management curriculum.

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

The College of Education and Professional Studies (CEPS) does not have additional curricular requirements that pertain to the Construction Management Program.

C. Plan of Study

1. Date of most recent curriculum revision 2008

2. List the course requirements by semester or quarter.

The following is a suggested plan of study for students pursuing a Construction Management degree. Both the General Building and Heavy Civil Options are shown.

FRESHMAN YEAR

	GENERAL BUILDING OPTION	HEAVY CIVIL OPTION	credits
FALL	UNIV 101 - Academic Advising Seminar		1
	ENG 101 - English Composition I		4
	MATH 172 - Calculus I		5
	IET 161 - Architectural CAD		3
	IT 101 - Computer Applications		3
	TOTAL		16
WINTER	ENG 102 - Composition II		4
	MATH 173 - Calculus II		5
	General Education Elective		5
	TOTAL		14
SPRING	GEOL 101 w/Lab - Physical Geology or GEOL 108 Environmental Geology		5
	General Education Elective (MATH 102, MATH 130, PHIL 201, CS 105)		4 - 5
	General Education Elective		5
	TOTAL		14 - 15

SOPHOMORE YEAR

	GENERAL BUILDING OPTION	HEAVY CIVIL OPTION	credits
FALL	CMGT 265 - Blueprint Reading and Construction Graphics		4
	PHYS 181 w/Lab - General Physics		5
	ECON 201 - Principles of Economics Micro		5
	TOTAL		14
WINTER	CHEM 111 w/Lab - Introduction to Chemistry or CHEM 181w/Lab - General Chemistry I		5
	BUS 241 - Legal Environment of Business		5
	General Education Elective		4 - 5
	TOTAL		14 - 15
SPRING	CMGT 245 - Light Commercial Construction - or - IET 490 - Cooperative Education	General Education Elective	3 - 5
	CMGT 267 w/Lab - Plane Surveying and Field Session		4
	General Education Elective		4 - 5
	IT 258 - Spreadsheet Applications, IT 268 - Database Applications, or General Eduction Elective		3
	TOTAL		14 - 17

JUNIOR YEAR

	GENERAL BUILDING OPTION	HEAVY CIVIL OPTION	credits
FALL	IET 311 - Statics		4
	IET 301 - Engineering Project Cost Analysis		4
	SHM 323 - Construction Safety		3
	Choose Minimum 5 Credits: HRM 381 - Management of Human Resources (5), MGT 380 Organizational Management (5), MKT 360 – Principles of Marketing (5), ADMG – 201 Introduction to Business(3), ADMG 372 – Leadership and Supervision (4)		5
		TOTAL	16
WINTER	IET 312 - Strength of Materials		4
	CMGT 320 - Electrical Systems Design		3
	CMGT 343 w/Lab - Construction Estimating I		4
	CMGT 346 - Construction Methods & Materials	CMGT 347 - Heavy Civil Methods & Materials	4
		TOTAL	15
SPRING	CMGT 344 w/Lab - Construction Estimating II	CMGT 345 w/Lab - Heavy Civil Estimating II	4
	ACCT 301 - Financial Accounting Analysis		5
	COM 345 - Business and Professional Speaking		4
	Choose Minimum 5 Credits: HRM 381 - Management of Human Resources (5), MGT 380 Organizational Management (5), MKT 360 – Principles of Marketing (5), ADMG – 201 Introduction to Business(3), ADMG 372 – Leadership and Supervision (4)		5
		TOTAL	18

SENIOR YEAR

	GENERAL BUILDING OPTION	HEAVY CIVIL OPTION	credits
FALL	CMGT 444 - Codes, Contracts and Specs.	CMGT 445 - Heavy Civil Contract Law	4
	CMGT 450 - Soils and Foundations		4
	CMGT 447 - Construction Planning, Scheduling and Control		4
	General Education Elective	IET 490 - Cooperative Education	3 - 5
		TOTAL	15 - 17
WINTER	CMGT 441 - Wood and Steel Construction	CMGT 440 - Temporary Structures	4
	CMGT 455 - Principles of Constr. Mgmt.	CMGT 456 - Prin. of Heavy Civil Constr. Mgmt.	4
	CMGT 488 - Professional Certification		1
	General Education Elective		4 - 5
		TOTAL	13 - 14
SPRING	CMGT 442 - Building Service Systems	CMGT 443 - Heavy Civil Utilities	3
	CMGT 460 - Concrete Construction	CMGT 461 - Pavement Design & Construction	4
	CMGT 485 - Construction Accounting, Finance and Contemporary Topics		4
		TOTAL	11

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 Form 103, Standards and Criteria for Baccalaureate 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."

Fig. 5 - GENERAL EDUCATION

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits	required
	Oral and Written Communication		
ENG 101	English Composition I	4	
ENG 102	English Composition II	4	
COM 345	Business and Professional Speaking	4	
	Communication subtotal	**12**	**12**
	Ethics		
	Integrated throughout the curriculum (15 instructional hours)	(1.5)	
UNIV 101	Academic Advising Seminar	1	
MATH 102, MATH 130, PHIL 201, or CS 105	Reasoning Requirement	4 - 5	
CS 101 or IT 101		3-4	
ELECTIVE	Arts and Humanities: Literature and the Humanities	4 - 5	
ELECTIVE	Arts and Humanities: The Aesthetic Experience	4 - 5	
ELECTIVE	Arts and Humanities: Philosophies and Cultures of the World	5	
ELECTIVE	Social and Behavioral Sciences:	3 - 5	
ELECTIVE	Social and Behavioral Sciences:	4 - 5	
ELECTIVE	The Natural Sciences	4 - 10	
	CATEGORY TOTAL	**32 - 45**	**22**

Fig. 6 - MATHEMATICS and SCIENCE

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits		required
	Mathematics			
MATH 172	Calculus I	5		
MATH 173	Calculus II	5		
	Mathematics subtotal		**10**	**4**
	Science			
PHYS 181	General Physics w/Lab	5		
CHEM 111 or CHEM 181	Introduction to Chemistry w/Lab, or General Chemistry I w/Lab	5		
GEOL 101 or GEOL 108	Physical Geology w/Lab Introduction to Environmental Geology	5		
	Science subtotal		**15**	**12**
	CATEGORY TOTAL		**25**	**22**

Fig. 7 - BUSINESS and MANAGEMENT

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits		required
ECON 201	Principles of Economics Micro	5		
BUS 241	Legal Environment of Business	5		
ACCT 301	Financial Accounting Analysis	5		
	Choose minimum 10 credits from the following**			
HRM 381	Management of Human Resources	5		
MGT 380	Organizational Management	5		
MKT 360	Principles of Marketing	5		
ADMG 201	Introduction to Business	3		
ADMG 372	Leadership and Supervision	4		
IET 301	Engineering Project Cost Analysis (2 of 4 credits here)	2*		
	CATEGORY TOTAL		**27-29**	**27**

* Credits for one course are divided among multiple curriculum areas.
** Management sequence used to provide flexibility within course selection

Fig. 8 - CONSTRUCTION SCIENCE

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits	required
	Design Theory		
IET 311	Statics	4	
IET 312	Strength of Materials	4	
CMGT 450	Soil Mechanics and Foundations (2 of 4 credits here)	2*	
	Design Theory subtotal	**10**	**4**
	Analysis and Design of Construction Systems		
CMGT 320	Electrical Systems Design	3	
CMGT 440 or CMGT 441	Temporary Structures (3 of 4 credits here) Wood and Steel Construction (3 of 4 credits here)	3*	
CMGT 450	Soil Mechanics and Foundations (1 of 4 credits here)	1*	
CMGT 442 or CMGT 443	Building Service Systems Heavy Civil Utilities	3	
	Analysis and Design of Construction Systems subtotal	**10**	**9**
	Construction Methods and Materials		
CMGT 346 or CMGT 347	Construction Methods and Materials Heavy Civil Methods and Materials	4	
CMGT 440 or CMGT 441	Temporary Structures (1 of 4 credits here) Wood and Steel Construction (1 of 4 credits here)	1*	
CMGT 450	Soil Mechanics and Foundations (1 of 4 credits here)	1*	
CMGT 460 or CMGT 461	Concrete Construction Pavement Design and Construction	4	
	Construction Methods and Materials subtotal	**10**	**9**
	Construction Graphics		
IET 161	Architectural Computer Aided Design	3	
	Construction Graphics subtotal	**3**	**1.5**
	Construction Surveying		
CMGT 267	Plane Surveying w/Lab	4	
	Construction Surveying subtotal	**4**	**1.5**
	CATEGORY TOTAL	**37**	**30**

* Credits for one course are divided among multiple curriculum areas.

Fig. 9 - CONSTRUCTION

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits	required
	Estimating		
CMGT 343	Construction Estimating I	4	
CMGT 344 or CMGT 345	Construction Estimating II Heavy Civil Estimating II	4	
	Estimating subtotal	**8**	**4**
	Planning and Scheduling		
CMGT 447	Construction Planning, Scheduling and Control	4	
	Planning and Scheduling subtotal	**4**	**4**
	Construction Accounting and Finance		
CMGT 485	Construction Accounting, Finance and Contemporary Topics	2*	
	Construction Accounting and Finance subtotal	**2**	**1.5**
	Construction Law		
CMGT 444 or CMGT 445	Codes, Contracts and Specifications Heavy Civil Contract Law	4	
	Construction Law subtotal	**4**	**1.5**
	Safety		
SHM 323	Construction Safety	3	
	Safety subtotal	**3**	**1.5**
	Project Management		
CMGT 455 or CMGT 456	Principles of Construction Management Principles of Heavy Civil Construction Management	4	
	Project Management subtotal	**4**	**4**
	Other		
CMGT 245 or IET 490 or CMGT 452	Light Commercial Construction Cooperative Education - Internship LEED in Sustainable Construction	4 - 5	
CMGT 265	Blueprint Reading and Construction Graphics	4	
CMGT 485	Construction Accounting, Finance and Contemporary Topics	2*	
CMGT 488	Professional Certification	1	
IET 301	Engineering Project Cost Analysis (2 of 4 credits here)	2*	
	CATEGORY TOTAL	**38 - 39**	**30**

* Credits for one course are divided among multiple curriculum areas.

CONSTRUCTION SCIENCE and CONSTRUCTION TOTAL	**75 - 76**	**75**

Fig. 10 - OTHER REQUIREMENTS

COURSE NO.	COURSE TITLE or ELECTIVE DESIGNATION	credits	required
None	None	0	
	CATEGORY TOTAL	**0**	**0**

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.

(See table on the following foldout pages.)

F. Degree Requirements – Two Year Associated Degree Program

Two Year Associate Degree Does Not Apply

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

Two Year Associate Degree Does Not Apply

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.

COURSE PREREQUISITE OR CO-REQUISITE LISTING

COURSE NUMBER AND TITLE		COURSE PREREQUISITE OR CO-REQUISITE	
ENG 102	English Composition II	ENG 101	English Composition I
BUS 241	Legal Environment of Business		Sophomore standing
ADMG 201	Introduction to Business		None
ADMG 372	Leadership and Supervision		None
MATH 172	Calculus I	MATH 154	Pre-Calculus Mathematics II
MATH 173	Calculus II	MATH 172	Calculus
PHYS 181	General Physics w/Lab	MATH 172	Calculus
CHEM 111	Introduction to Chemistry w/Lab (and)		High school chemistry
CHEM 181	General Chemistry I w/Lab	MATH 153	Pre-Calculus Mathematics I
IET 301	Engineering Project Cost Analysis	MATH 153	Pre-Calculus Mathematics I
IET 311	Statics	PHYS 111 (or) PHYS 181 MATH 173	Introductory Physics (or) General Physics Calculus
IET 312	Strength of Materials	IET 311	Statics
CMGT 245	Light Commercial Construction	CMGT 265	Blueprint Reading & Constr. Graphics
CMGT 265	Blueprint Reading & Constr. Graphics		
CMGT 267	Plane Surveying w/ Field session	MATH 154 IT 101 CMGT 265	Pre-Calculus Mathematics II Computer Applications Blueprint Reading & Construction Graphics
CMGT 320	Electrical Systems Design	MATH 172	Calculus and CMGT 265
CMGT 343	Construction Estimating I w/Lab	CMGT 265	Blueprint Reading & Constr. Graphics
CMGT 344	Construction Estimating II w/Lab	CMGT 343	Construction Estimating I
CMGT 345	Heavy Civil Estimating II w/Lab	CMGT 343	Construction Estimating I
CMGT 346	Construction Methods and Materials	CMGT 265	Blueprint Reading & Constr. Graphics
CMGT 347	Heavy Civil Methods and Materials	CMGT 265	Blueprint Reading & Constr. Graphics
CMGT 440	Temporary Structures	IET 312 CMGT 346 (or) CMGT 347	Strength of Materials Construction Methods and Materials (or) Heavy Civil Methods and Materials
CMGT 441	Wood and Steel Construction	IET 312 CMGT 346	Strength of Materials Construction Methods and Materials
CMGT 442	Building Service Systems	CMGT 265	Blueprint Reading
CMGT 443	Heavy Civil Utilities	CMGT 346 (or) CMGT 347	Construction Methods and Materials (or) Heavy Civil Methods and Materials
CMGT 444	Codes, Contracts and Specifications	CMGT 346 (or) CMGT 347 BUS 241 ENG 102	Construction Methods and Materials (or) Heavy Civil Methods and Materials Legal Environment of Business English Composition II
CMGT 445	Heavy Civil Contract Law	CMGT 344 (or) CMGT 345 ENG 102 BUS 241	Construction Estimating II (or) Heavy Civil Estimating II English Composition II Legal Environment of Business

COURSE NUMBER AND TITLE		COURSE PREREQUISITE OR CO-REQUISITE	
CMGT 447	Constr. Planning, Scheduling & Control	CMGT 343	Construction Estimating I
CMGT 450	Soils and Foundations	IET 312 CMGT 346 CMGT 347 GEOL 101 (or) GEOL 108	Strength of Materials Construction Methods and Materials (or) Heavy Civil Methods and Materials Physical Geology w/Lab (or) Introduction to Environmental Geology
CMGT 455	Principles of Construction Management	CMGT 447 CMGT 444 (or) CMGT 445	Constr. Planning, Scheduling & Control Codes, Contracts and Specifications Heavy Civil Contract Law
CMGT 456	Principles of Heavy Civil Construction Management	CMGT 447 CMGT 344 (or) CMGT 345	Constr. Planning, Scheduling & Control Construction Estimating II (or) Heavy Civil Estimating II
CMGT 460	Concrete Construction	IET 312 CMGT 346 (or) CMGT 347 CMGT 440 CMGT 441 CHEM 181	Strength of Materials Construction Methods and Materials Heavy Civil Methods and Materials Heavy Civil Temporary Structures Wood and Steel Construction General Chemistry
CMGT 461	Pavement Design and Construction	IET 312 CMGT 346 (or) CMGT 347 CMGT 440 CMGT 441 CHEM 181	Strength of Materials Construction Methods and Materials (or) Heavy Civil Methods and Materials Heavy Civil Temporary Structures Wood and Steel Construction General Chemistry
CMGT 485	Construction Acct., Finance and Contemporary Topics	CMGT 444 (or) CMGT 445	Codes, Contracts and Specifications Heavy Civil Contract Law
CMGT 488	Professional Certification	CMGT 444 (or) CMGT 445	Codes, Contracts and Specifications Heavy Civil Contract Law
HRM 381	Management of Human Resources		Non-Business Majors
MGT 380	Organizational Management		Non-Business Majors
MKT 360	Principles of Marketing		Non-Business Majors

I. Course Descriptions

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

Construction Management Courses:

CMGT 245. Light Commercial Construction (5). Prerequisite, CMGT 265 or permission of the instructor. Construction of building foundations, commercial carpentry, and enclosing of wood frame structures. Students participate in construction of a building.

CMGT 265. Blueprint Reading and Construction Graphics (4). Introduction to plan reading, construction terminology and the construction process. Extensive work with plans of significant scope. Not open to students with credit in CMGT 266.

CMGT 267. Plane Surveying (3). Prerequisites, MATH 154 and CMGT 265. Co-requisite, CMGT 267LAB or CMGT 267LABHC. General surveying theory and practice pertaining to distance, elevation and angle measurement. Includes traverse calculations and an emphasis on construction applications.

CMGT 267LAB. Plane Surveying Field Session (1). Co-requisite, CMGT 267. NOTE: One surveying field session weekly.

CMGT 267LABHC. Plane Surveying Field Session (1). Co-requisite, CMGT 267. NOTE: One surveying field session weekly.

CMGT 320. Electrical Systems Design (3). Prerequisite, MATH 172 and CMGT 265. Design and specification of building electrical systems including circuit principles, power distribution and low voltage controls.

CMGT 343. Construction Estimating I (3). Prerequisites, CMGT 265 and IT 101. Co-requisite, CMGT 343LAB. Quantity surveying and bid preparation for general construction. Use of cost handbooks, specifications and bid documents.

CMGT 343LAB. Construction Estimating I Laboratory (1). Co-requisite, CMGT 343. NOTE: One estimating computer laboratory session weekly.

CMGT 344. Construction Estimating II (3). Prerequisite CMGT 343. Co-requisite, CMGT 344LAB. Advanced quantity surveying and bid preparation for general construction.

CMGT 344LAB. Construction Estimating II Laboratory (1). Co-requisite, CMGT 344. NOTE: One estimating computer laboratory session weekly.

CMGT 345. Heavy Civil Estimating II (3). Prerequisite, CMGT 343. Co-requisite, CMGT 345LAB. Advanced estimating techniques and bid preparation for heavy civil and highway construction.

CMGT 345LAB. Heavy Civil Estimating II Laboratory (1). Co-requisite, CMGT 345. NOTE: One weekly estimating laboratory session.

CMGT 346. Construction Methods and Materials (4). Prerequisite, CMGT 265. Materials commonly used and the various methods employed in construction. Introduction to materials testing.

CMGT 347. Heavy Civil Methods and Materials (4). Prerequisite, CMGT 265. Materials commonly used and the various methods employed with an emphasis on heavy, civil, marine and highway construction.

CMGT 440. Temporary Structures (4). Prerequisite, IET 312 and CMGT 346 or 347. An introduction to the materials, methods and techniques associated with temporary construction facilities such as false work, scaffolding, formwork and cofferdams.

CMGT 441. Wood and Steel Construction (4). Prerequisites, IET 312, CMGT 346. A comprehensive study of the materials, design and erection of wood and steel structures.

CMGT 442. Building Service Systems (3). Prerequisites, CMGT 344. An introduction to building service systems. Study the interfaces and specifications of mechanical and plumbing systems in building construction. Topics include; plumbing, fire suppression, storm drainage, heat gain/loss, heating and cooling systems, and elevators.

CMGT 443. Heavy Civil Utilities (3). Prerequisite, CMGT 346 or CMGT 347. An introduction to the materials, equipment, methods, and safety requirements for the construction of underground and above ground utilities including water, sewer, natural gas and electrical systems.

CMGT 444. Codes, Contracts and Specifications (4). Prerequisites CMGT 346 or CMGT 347, BUS 241 and ENG 102. Construction contracts and liability, bonding, arbitration, specifications, and building codes administration.

CMGT 445. Heavy Civil Contract Law (4). Prerequisite, CMGT 346 or CMGT 347 and BUS 241 and ENG 102. Construction contracts, liability, bonding, arbitration and heavy civil highway specifications.

CMGT 447. Construction Planning, Scheduling and Control (4). Prerequisites CMGT 343. Project scheduling and evaluation using network scheduling techniques, including critical path scheduling. Includes short interval scheduling and cash flow forecasting.

CMGT 450. Soils and Foundations (4). Prerequisites, IET 312, CMGT 346 or CMGT 347, and GEOL 101, GEOL 101LAB or GEOL 108. An introduction to soil mechanics and design of both shallow and deep foundations.

CMGT 452. LEED in Sustainable Construction (4). Prerequisites, CMGT 265. The process using LEED as a measurement for sustainable construction. The course covers benefits and mechanisms of green building, cost analyses and professional problem-solving. CMGT 452 and IET 552 are equivalent courses, students may not receive credit for both.

CMGT 455. Principles of Construction Management (4). Prerequisites, CMGT 447 and either CMGT 444 or CMGT 445. Fundamental tools of construction management. Topics; contract management, scheduling, cost estimating, cost control, conflict management, negotiating, team building, quality control, safety, and a capstone project.

CMGT 456. Principles of Heavy Civil Construction Management (4). Prerequisites, CMGT 447 and either CMGT 344 or CMGT 345. Fundamental tools of heavy civil highway construction management. Topics include; contract management, scheduling, cost estimating, cost control, conflict management, negotiating, team building, quality control, safety and a capstone project.

CMGT 460. Concrete Construction (4). Prerequisites, IET 312 and CMGT 346 or CMGT 347, CMGT 440 or CMGT 441. Manufacturing and testing of concrete; field practices; and formwork. NOTE: Two hours lecture and two hours laboratory per week.

CMGT 461. Pavement Design and Construction (4). Prerequisites, IET 312 and CMGT 346 or CMGT 347. An introduction to flexible and rigid pavement design and construction including pavement types, materials, construction methods and maintenance concerns.

CMGT 485. Construction Accounting, Finance and Contemporary Topics (4). Prerequisite, CMGT 444 or CMGT 445. Project cost accounting principles, applications and impact on profitability. Includes principles of activity based costing; WBS, earned value, cash management, value engineering and contemporary topics.

CMGT 488. Professional Certification (1). Prerequisite CMGT 444 or CMGT 445. A comprehensive review of professional construction management principles and technical skills in preparation for a national certification examination.

CMGT 495. Construction Management Competition Preparation (1). Prerequisite, CMGT 344 or CMGT 345. Students work in teams to prepare for Construction Management competition. Teams develop cost, schedule, site layout and safety plans for a major construction project. Students will compete in the Associated Schools of Construction competition in Reno NV.

Other Courses:

Industrial and Engineering Technology (IET) Department Courses

IET 161. Architectural Computer Aided Design (3). (No additional course description information appears in current University Catalog for this course.)

IET 301. Engineering Project Cost Analysis (4). Prerequisite, MATH 153. Techniques of economic cost analysis applied to engineering projects: interest, present value, annual equivalence, rate of return, payout criteria, and break even modeling.

IET 311. Statics (4). Prerequisites, PHYS 111, 181 and MATH 173 or permission of instructor. Introductory statics including forces and equilibrium. Principles of structures including trusses, beams, frames, machines and friction.

IET 312. Strength of Materials (4). Prerequisite, IET 311. Strength of materials, including stress analysis of axially loaded members, torsional members, beams and indeterminate structures.

SHM 323. Construction Safety (3). Prerequisite, SHM 301 or CMGT 265. A comprehensive course that covers the safety and health regulations and practices pertaining to the construction industry.

Mathematics and Science Courses

MATH 172. Calculus I (5). Prerequisite, MATH 154 with a grade of C or higher; OR a score of 19 on the Advanced Math Placement Test; OR a score of 46 or higher on the Compass Trigonometry test. Theory, techniques and applications of

differentiation and integration of the elementary functions.

MATH 173. Calculus II (5). Prerequisite, MATH 172 with a grade of C or higher.. Theory, techniques and applications of differentiation and integration of the elementary functions.

PHYS 181. General Physics (4). Pre- or co-requisite, MATH 172. Must be taken concurrently with PHYS 181LAB. Topics in physics including kinematics and dynamics. Analyzing physical systems using algebra, trigonometry, and calculus.

PHYS 181LAB. General Physics Laboratory (1). Co-requisite, must be taken concurrently with PHYS 181. Investigation of topics in physics including kinematics and dynamics.

CHEM 111. Introduction to Chemistry (4). Chemical principles of the compositions, structure, properties and changes of matter. Designed for students in certain health sciences or preparing for CHEM 181. Four lectures weekly.

CHEM 111LAB. Introductory Chemistry Laboratory (1). Pre- or co-requisite, CHEM 111. Introduction to basic chemistry techniques. One two-hour laboratory session weekly.

CHEM 181. General Chemistry I (4). Prerequisites, strongly recommended high school chemistry and qualification for MATH 153 or math placement exam. This course introduces chemistry concepts such as atoms and molecules, stoichiometry, solution chemistry, thermochemistry, electronic structure of the atom and periodicity and chemical bonding.

CHEM 181LAB. General Chemistry I Laboratory (1). Pre- or co-requisite, CHEM 181. This laboratory supports hands-on inquiry-based approaches to exploring topics presented in CHEM 181. One three-hour lab session weekly.

GEOL 101. Physical Geology (4). Co-requisite, GEOL 101LAB. An introduction emphasizing the origin and nature of the common rocks, and the continually changing features of the earth's crust. NOTE: Four lectures per week.

GEOL 101LAB. Physical Geology Laboratory (1). Co-requisite, GEOL 101 or GEOL 102 or GEOL 103. Application of map study to geological processes and land forms, identification of rocks and minerals. NOTE: Two hours laboratory per week.

GEOL 108. Introduction to Environmental Geology (5). Interaction between human activity and geological processes. Scientific discussion of global environmental issues such as ozone depletion, climate change, geologic hazards, natural resources and water use. Formerly GEOL180. Students may not receive credit for both.

Information Technology, Business, Management, Economics, Accounting and Communication Courses

ACCT 301. Financial Accounting Analysis (5). Not open to accounting and business administration majors. Recommended for individuals not majoring in accounting or business. Underlying concepts, preparation and use of financial statements from the user's viewpoint.

ADMG 201. Introduction to Business (3). Functions, practices, and organization of the business enterprise. ADMG 201 and ADMG 301 are layered course; students may not receive credit for both.

ADMG 372. Leadership and Supervision (4). Develop leadership techniques and behavioral traits to improve productivity of supervisors and leaders in the workplace, and enhance interpersonal skills for career success.

BUS 241. Legal Environment of Business (5). Prerequisite, sophomore standing. An introduction to legal reasoning, ethics in business, the law of contracts, torts, agency, sales, bailments, and personal property. NOTE: Formerly FIN 241. Students may not receive credit for both.

COM 345. Business and Professional Speaking (4). Prerequisite, permission. Oral communication in career and professional settings with focus on public presentations, briefings and persuasion.

ECON 201. Principles of Economics Micro (5). The function of the market system in the allocation of scarce resources, determination of prices and output in competitive and monopolistic markets, and distribution of income. The role of government in the market economy.

ENG 101. English Composition I (4). Prerequisite, adequate ACT, COMPASS, or SAT scores. Develops skills necessary for academic writing, including summarizing, reading sources critically and responding to them, synthesizing multiple perspectives, and using academic writing conventions. Required of all students except those who have passed an exemption examination. Students must earn a minimum grade of C- or above to enroll in ENG 102.

ENG 102. English Composition II (4). Prerequisite, ENG 101 with a grade of C- or higher. Develops skills in research-based academic argument through assignments involving evaluation, analysis and synthesis of multiple sources.

HRM 381. Management of Human Resources (5). Selection of personnel, methods of training and retraining workers, wage policy, utilization of human resources, job training, administration of labor contracts, and public relations. NOTE: Formerly IR 381, BUS 381, and MGT 381. Students may not receive credit for more than one.

MGT 380. Organizational Management (5). Prerequisite, only available for non-business majors. Principles of management class for non-business majors. Explores the function and processes of marketing, introducing students to the fundamental marketing concepts. Overview of all the major elements of the managerial function. NOTE: Students may not receive credit for both MGT 380 and MGT 382.

MKT 360. Principles of Marketing. Principles of marketing class for non-business majors. Explores the function and processes of marketing, introducing students to the fundamental marketing concepts. MKT360 and MKT362 are equivalent courses; students may not receive credit for both.

UNIV 101. Academic Advising Seminar (1). This course is designed for students to learn about the mission of the general education program and majors in order to make informed academic decisions and discover opportunities for personal growth.

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

Current course listings are consistent with the catalog descriptions (barring transcription and typographical errors).

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

Course syllabi are included in Volume II.

J. Course Offerings

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

Fig. 16 – REQUIRED CMGT COURSE OFFERINGS AND ENROLLMENTS

COURSE NUMBER & TITLE		F'13	W'14	S'14	Aver. No.
CMGT 245	Light Commercial Construction			1	14
CMGT 265	Blueprint Reading & Constr. Graphics	1	1		56
CMGT 267	Plane Surveying w/ Field session			1 (3 labs)	35
CMGT 320	Electrical Systems Design		1		27
CMGT 343	Construction Estimating I w/Lab		1 (2 labs)		34
CMGT 344	Construction Estimating II w/Lab			1 (2 labs)	21
CMGT 345	Heavy Civil Estimating II w/Lab			1 (1 lab)	12
CMGT 346	Construction Methods and Materials		1		25
CMGT 347	Heavy Civil Methods and Materials		1		15
CMGT 440	Temporary Structures		1		10
CMGT 441	Wood and Steel Construction		1		21
CMGT 442	Building Service Systems			1	28
CMGT 443	Heavy Civil Utilities			1	12
CMGT 444	Codes, Contracts and Specifications	1			24
CMGT 445	Heavy Civil Contract Law	1			11
CMGT 447	Constr. Planning, Scheduling & Control	1 (2 labs)			32
CMGT 450	Soils and Foundations	1 (2 labs)			31
CMGT 455	Principles of Construction Management		1		21
CMGT 456	Principles of Heavy Civil Constr. Management		1		10
CMGT 460	Concrete Construction			1	19
CMGT 461	Pavement Design and Construction			1	15
CMGT 485	Constr. Acct., Finance & Contemporary Topics			1	31
CMGT 488	Professional Certification		1		31

* CMGT 443 combined with CMGT 442 for both options this year only

** CMGT 456 combined with CMGT 455 for both options this year only

2. List the elective courses offered by the construction unit during the past two academic years. Indicate course number, title, number of sections per semester or quarter, and average enrollment per section.

Fig. 17 – ELECTIVE CMGT COURSE OFFERINGS AND ENROLLMENTS

COURSE NUMBER & TITLE		NUMBER OF SECTIONS						AVERAGE ENROLLED
		F12	W13	S13	F13	W14	S14	
CMGT 495	Construction Management Competition Prep.	3			4			7
CMGT 452	LEED in Sustainable Construction		1			1		8

3. Comments, if any.

The curriculum is well received by the students in the program, as documented by individual course evaluations, and is highly regarded by program alumni as indicated by alumni now working in industry (see Section IX-A Program Quality Assessment). The curriculum is also consistent with the mission of the program to provide a quality general undergraduate construction education.

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 NUMBER & TITLE		OTHERS USING COURSE
ACCT 301	Financial Accounting Analysis	All campus
ADMG 201	Introduction to Business	All campus
ADMG 372	Leadership and Supervision	All campus
BUS 241	Legal Environment of Business	All campus
CHEM 111	Introduction to Chemistry	All campus
CHEM 181	General Chemistry I	All campus
COM 345	Business and Professional Speaking	All campus
ECON 201	Principles of Economics Micro	All campus
ENG 101	Composition I	All campus
ENG 102	Composition II	All campus
GEOL 101	Physical Geology	All campus
GEOL 108	Introduction to Environmental Geology	All campus
HRM 381	Management of Human Resources	All campus
MGT 380	Organizational Management	All campus
MKT 360	Principles of Marketing	All campus
IET 161	Architectural CAD	Electronics Engineering Technology
		Electronics Engineering Technology
		Industrial Technology
IET 301	Engineering Project Cost Analysis	Electronics Engineering Technology
		Industrial Technology
		Mechanical Engineering Technology
IET 311	Statics	Mechanical Engineering Technology
IET 312	Strength of Materials	Mechanical Engineering Technology
MATH 172	Calculus I	All campus
MATH 173	Calculus II	All campus
PHYS 181	General Physics w/Lab	All campus
SHM 323	Construction Safety	Safety and Health Management
UNIV 101	Academic Advising Seminar	All campus

2. Discuss the adequacy of the courses.

The supporting courses complement the required CMGT courses. Other departments have been very willing to cooperate with the ETSC Department to assure that course offerings and content meet the needs of the CMGT students. In addition, faculty from other departments have been very willing to assist CMGT faculty determine the adequacy of specific transfer courses if they are in question.

Explanation of tier layout
Tier 1 - Curriculum Categories
Tier 2 - Core Subject Matter (hours assigned)
Tier 3 - Topical Content (mark with X)

		Total Credit Hours	**Instructional Hours**	ENG 101	ENG 102	COM 345	UNIV 101	Reasoning	Arts Literature	Arts Aesthetics	Arts Cultures	Soc Science	Natural Sciences	PHYS 181	CHEM 111/181	GEOL 101/108	MATH 172	MATH 173	CMGT 245	CMGT 265	CMGT 267	CMGT 320	CMGT 343	CMGT 344/345	CMGT 346/347	CMGT 441/440	CMGT 442/443	CMGT 444/445	CMGT 447	CMGT 450	CMGT 455/456	CMGT 460/461	CMGT 485	CMGT 488
1	**General Education (15 sem/22 qt) 225 instructional hours**	**41-53**	**410-530**	40	40	40*	10	40-50	40-50	40-50	50	70-100	40-100																					
1.1	**Communication [Oral and Written] (8 sem/12 qt) 120 instructional hours***	**12**	**120**	40	40	40																												
1.2	**Ethics (1sem/1.5qt) 15 instructional hours* (Instructional hours are indicated for the CMGT courses)**	**(1.8)**	**(18)**																	2	2		2	2	1	1		2	1		2		2	1
	Selection Options: Human relations; Psychology; Sociology; Social Science; Literature; History; Philosophy; Art; Language; Political Science																																	
	*Must be integrated throughout construction-specific curriculum																																	
2	**Mathematics and Science (15 sem/22 qt) 225 instructional hours***	**25**	**250**																															
2.1	**Physical or Environmental science [analytical] (8 sem/12 qt) 120 instructional hours**	**15**	**150**											50	50	50																		
2.11	Selection Options: Physics; Chemistry; Geology; Environmental Science;													X	X	X																		
2.2	**Statistics and/or Mathematics (3 sem/4 qt) 45 instructional hours**	**10**	**100**														50	50																
2.21	Selection Options: Analytic geometry; Pre-calculus; Calculus; Linear Algebra; Statistics; Other Sciences; Computer science.																X	X																

* NOTE: COM 345- Not a University general education requirement, but a construction program curriculum requirement for 1.1- Communication (Oral and Written).

Explanation of tier layout
Tier 1 - Curriculum Categories
Tier 2 - Core Subject Matter (hours assigned)
Tier 3 - Topical Content (mark with X)

		Total Credit Hours	**Instructional Hours**	ECON 201	ACCT 301	MGT 380 or HRM 381 or MKT 360 or ADMG 201 or ADMG 372 or	BUS 241	IET 301	IET 311	IET 312	CMGT 450	CMGT 320	CMGT 441/440	CMGT 442/443	CMGT 346/347	CMGT 460/461	CMGT 245	CMGT 265	CMGT 343	CMGT344/345	CMGT 444/445
3	**Business and Management (18 sem/27 qt) 270 instructional hours**	**27**	**270**																		
3.1	**Economics**	**5**	**50**	50																	
3.2	**Accounting**	**5**	**50**		50																
3.3	**Principles of Management**	**5**	**100**			100*															
3.4	**Business Law**	**5**	**50**				50														
3.7	**Other - Project Cost Analysis**	**2**	**20**					20													
4	**Construction Science** (20 sem/30 qt) 300 instructional hours**	**37**	**370**																		
4.1	**Design Theory (3 sem/4 qt) 45 instructional hours**	**10**	**100**						40	40	20										
4.11	Select one or more of the following options: Structural Mechanics; Electricity; Thermodynamics; Soil Mechanics.								X	X	X										
4.2	**Analysis and Design of Construction Systems (6 sem/9 qt) 90 instructional hours** (It is the intent of this requirement to ensure that construction program graduates have, at least minimum, some exposure to all basic systems that may be incorporated into a building project)	**10**	**100**								10	30	30	30							
4.21	Civil										X		X		X						
4.22	Electrical											X									
4.23	Mechanical													X							
4.24	Structural												X								
4.3	**Construction Methods and Materials (6 sem/9 qt) 90 instructional hours [including: concrete, steel, wood, and soils]**	**10**	**10**								10		10		40	40					
4.31	Composition and properties									X	X		X		X	X	X	X	X	X	
4.32	Terminology & Units of measure									X	X		X		X	X	X	X	X	X	
4.33	Standard designations, sizes, and graduations									X	X		X		X	X	X	X	X	X	
4.34	Conformance references and testing techniques									X					X	X	X				
4.35	Products, systems and interface issues											X					X	X			
4.36	Equipment applications and utilization											X			X	X	X				
4.37	Comparative cost analysis							X						X	X				X	X	
4.38	Assembly techniques & equipment selection											X		X	X	X	X		X	X	
4.39	Building Codes and Standards											X	X	X	X	X	X	X			X

* NOTE: For Principles of Business Management students have option to take 2 or 3 courses to complete 100 instructional hours to complete this category.

Explanation of tier layout		NOTE: INCLUDE ALL REQUIRED COURSES IN THE PROGRAM BY NUMBER
Tier 1 - Curriculum Categories		
Tier 2 - Core Subject Matter (hours assigned)		
Tier 3 - Topical Content (mark with X)		

		Total Credits	**Instructional Hours**	SHM 323	IET 161	IET 301	CMGT 245	CMGT 265	CMGT 267	CMGT 320	CMGT 343	CMGT 344/345	CMGT 346/347	CMGT 441/440	CMGT 442/443	CMGT 444/445	CMGT 447	CMGT 450	CMGT 455/456	CMGT 460/461	CMGT 485	CMGT 488
4.4	**Construction Graphics (1 sem/1.5 qt) 15 instructional hours**	**3**	**30**		30																	
4.41	Basic sketching and drawing techniques				X			X														
4.42	Graphic vocabulary				X			X														
4.43	Detail hierarchies, scale, content				X			X														
4.44	Notes and specifications, reference conventions				X			X								X						
4.45	Computer applications				X																	
4.5	**Construction Surveying (1 sem/1.5 qt) 15 instructional hours**	**4**	**40**						40													
4.51	Survey, layout, and alignment control								X													
4.52	Site organization and development								X		X	X								X		
5	**Construction** (20 sem/30 qt) 300 instructional hours**	**38-39**	**390-400**																			
5.1	**Estimating (3 sem/4 qt) 45 instructional hours**	**8**	**80**								40	40										
5.11	Types of estimates and uses										X	X										
5.12	Quantity takeoff										X	X							X			
5.13	Labor and equipment productivity factors										X	X	X								X	
5.14	Pricing and price databases										X	X										
5.15	Job direct and indirect costs										X	X										
5.16	Bid preparations and bid submission										X	X							X			
5.17	Computer applications										X	X							X			
5.2	**Planning and Scheduling (3 sem/4 qt) 45 instructional hours**	**4**	**45**													40		3	2			
5.21	Parameters affecting project planning															X		X				
5.22	Schedule information presentation															X		X				
5.23	Network diagramming and calculations with CPM															X		X				
5.24	Resource allocation and management															X		X		X	X	
5.25	Impact of changes														X	X		X				
5.26	Computer applications															X		X				

Explanation of tier layout
Tier 1 - Curriculum Categories
Tier 2 - Core Subject Matter (hours assigned)
Tier 3 - Topical Content (mark with X)

		Total Credits	Instructional Hours	IET 161	IET 301	CMGT 495	SHM 323	CMGT 245	CMGT 265	CMGT 267	CMGT 320	CMGT 343	CMGT 344/345	CMGT 346/346	CMGT 441/440	CMGT 442/443	CMGT 444/445	CMGT 447	CMGT 450	CMGT 455/456	CMGT 460/461	CMGT 485	CMGT 488	IET 490 or CMGT 452
5.3	**Construction Accounting and Finance (1 sem/1.5 qt) 15 instructional hours**	**2**	**20**																			20		
5.31	Cost accounting and industry formats												X									X		
5.32	Fixed and variable costs: insurance, bonding, marketing, general and administrative expenses											X	X							X		X		
5.33	Bidding and procurement practices											X	X				X			X		X		
5.34	Record and report practices																			X		X		
5.35	Capital equipment, depreciation, and expensing				X								X									X		
5.36	Forecasting costs, cash flow requirements				X													X				X		
5.37	Payment processes and time value of money				X															X		X		
5.4	**Construction Law (1 sem/1.5 qt) 15 instructional hours**	**4**	**40**														40							
5.41	Construction contracts, roles & responsibilities of parties																X							
5.42	The regulatory environment and licensing																X							
5.43	Lien laws and the contractor's rights																X							
5.44	National and local labor law																X							
5.45	Administrative procedures to avoid disputes																X							
5.5	**Safety (1 sem/1.5 qt) 15 instructional hours**	**3**	**30**				30																	
5.51	Safe practices						X																	
5.52	Mandatory procedures, training, records, and maintenance						X	X																
5.53	Compliance, inspection, and penalties						X																	
5.6	**Project Management (3 sem/4 qt) 45 instructional hours**	**4**	**45**															3		40	2			
5.61	Concepts, roles, and responsibilities																X			X				
5.62	Labor relations																			X				
5.63	Administrative systems and procedures																			X		X		
5.64	Cost control data and procedures																			X		X		
5.65	Documentation at job site and office																			X		X		
5.66	Quality control philosophies and techniques																			X				
5.67	Computer applications																	X		X		X		
5.8	Other-Light Commercial Construction or Sustainable Construction or Cooperative Education	**4-5**	**40-50**					50																40
5.9	Other-Blueprint Reading and Construction Graphics	**4**	**40**						40															
5.10	Other-Construction Accounting and Finance and Contemporary Topics	**2**	**20**																			20		
5.11	Other-Professional Certification	**1**	**10**																				10	
5.12	Other-Engineering Project Cost Analysis	**2**	**20**		20																			
6.0	**Other**	**4**	**40**																					
6.1	Competition Preparation (elective)	**1**	**10**			10																		
	**Combined Construction Science and Construction 50 semester or 75 quarter hours total - 750 instructional hours																							

ACCE minimum program requirements (120 semester hours or 180 quarter hours) - 1800 instructional hours

IV. FACULTY

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

Name	FTE	Highest Degree	Years on Faculty	Tenured	Tenure Track	Non-Tenure Track	9 month	12 month
PROFESSOR								
CARNS, David	0.5	M.S.	30	Yes			XX	
ASSOCIATE PROFESSOR								
PLUGGE, P. Warren	1.0	Ph.D.	8	Yes	Yes			
WHELAN, Michael	1.0	Ph.D.	7	Yes	Yes		XX	
ASSISTANT PROFESSOR								
MARTIN, P. Warren	1.0	M.S.	3	No	Yes		XX	
LECTURER								
ANDLER, Michael	0.5	M.S.	7			Yes	XX	

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
PERMANENT SUPPORT STAFF		
VAN de VENTER, Susan	100% *	ETSC Administrative Secretary
BURVEE, Matthew	100% *	Scientific Instructional Technician
LYMAN, Gregory	100% *	Instruction & Classroom Support Technician
STUDENT SUPPORT STAFF (2013-14)		
None		

* ETSC Department asset utilized by CMGT Program as needed

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.

Faculty members are subject to a Collective Bargaining Agreement (CBA) that defines the workload for an academic year. The definition of a full-time faculty member, and the associated workload, is therefore consistent throughout the university. The most definitive description is contained in ARTICLE 14 - WORKLOAD and APPENDIX A INSTRUCTIONAL WORKLOAD of the current Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013). These portions of the CBA are included below for the reader's convenience.

In short, full-time faculty members are responsible for 45 workload units per academic year. These 45 workload units are typically divided among three categories: teaching, scholarship, and service. One classroom contact hour per week constitutes one workload unit; other equivalent measures of effort are defined for scholarship and service areas. CMGT faculty members normally allocate approximately 36 workload units to teaching activities per academic year (three 4-credit classes per quarter). A complete copy of the CBA is available online at https://www.cwu.edu/business/sites/cts.cwu.edu.business/files/09-13_CWU-UFC_Agreement_Final.pdf .

ARTICLE 14 – WORKLOAD

14.1 For the purposes of this Article, workload is defined as the activities tenured and tenure-track faculty shall be required to perform to meet the requirements of their employment contract.

14.2 A faculty member's workload shall be described in writing by the University and provided to individual faculty. The written description will include the specific activities that faculty shall accomplish in a specified period of time (i.e., quarter, academic year, calendar year, multi-year period) to fulfill professional obligations to the University. The determination of faculty workload is considered a substantive academic judgment; however, workloads must be consistent with the express terms of this Agreement.

14.3 The workload will typically consist of three parts: teaching, scholarship, and service. Normally, the workload will consist of a balance of these professional activities which are measured in workload units. It is understood that a tenured faculty member or librarian may or may not participate in all of these activities during a given academic year, and this understanding must be approved and documented by the department chair and dean in the workload plan.

14.3.1 Teaching: classroom, studio, laboratory, continuing education, and distance delivery instruction in regular academic courses with assigned workload units; development and coordination of special undergraduate and graduate seminars; preparation of student materials for classes; preparation of a new course or substantial revision of an older course; general advising of undergraduate students; supervision of student mentorships; supervision of graduate student theses and research/creative projects; supervision of undergraduate theses and research/creative projects; supervision of directed study through individualized courses; non-credit educational programs on-campus or elsewhere; supervision and management of teaching facilities; and other activities benefiting students' academic development. Guidelines for determining workload units of teaching are described in APPENDIX A – INSTRUCTIONAL WORKLOAD.

14.3.2 Scholarship: all professional activities leading to publication, performance, or formal presentation in the faculty member's field, or leading to external funding recognizing the faculty member's current or potential contribution to his/her field. Such activities include: manuscript submission; grant proposal submission; supervision of externally funded research projects; development of patentable inventions; and other original contributions, performances, exhibitions, or concerts appropriate to the faculty member's field.

14.3.3 Service:

(a) Public service: such as in organized, non-remunerative, educational and consultative activities which relate to a faculty's professional expertise and further the interests or prestige of the University.

(b) University service: such as department chair, director, program coordinator, or governance assignee; accreditation; program development; work on recognized administrative, department, college, school or university committees; and other tasks as deemed necessary by the University.

(c) Professional service: such as on grant, journal, or accreditation review boards, or as an ad hoc reviewer, in the faculty's area of expertise; as an officer in a professional society; organizing and/or chairing conferences, symposia, seminars, etc.; teaching short courses, seminars, etc. that are not regular academic courses; editing journals, books, special volumes of papers, etc.

14.4 Workload.

14.4.1 The composition of professional duties and responsibilities of faculty will be determined by the faculty member and department chair, and approved by the dean/director after consultation with the department chair and faculty as provided in Section 14.4.5.

14.4.2 In the determination of a faculty's workload, consideration shall include those items listed in Section 14.3 and the following factors: instructional needs of the department; accountability measures set by the Legislature or accreditors; needs of departmental faculty; historical workloads; the missions and goals of academic units, including unit criteria developed for the evaluation of faculty; the level, duration, and mode of delivery of a workload activity; the requirements of externally funded contracts and grants; and whether an activity requires individual or group activity or extended time commitments.

14.4.3 Faculty shall be responsible for forty-five (45) workload units per academic year. A workload in excess of forty-five (45) workload units per academic year shall constitute an overload and must be agreed to by the faculty member and approved in advance by the dean/director and the Provost.

14.4.4 All librarians will enjoy full faculty status with all the rights, privileges and responsibilities. Professional librarians shall constitute a department for administrative purposes.

(a) Librarians shall be scheduled for forty (40) hours per week during their contract and librarians shall be expected, as are all faculty, to assume internal and campus committee and other campus assignments.

(b) A library faculty's work schedule shall be based on the library's needs as determined by the Dean of Library Services in consultation with the members of the library faculty.

14.4.5 Workload Determination Procedure.

(a) Individual tenured and probationary faculty shall consult with the department chair and prepare in writing the proposed workload for each quarter of an academic year, or other specified time period. The proposed workload shall account for factors including those specified in Section 14.3 and be completed and submitted to the department chair on or before February 15th.

(b) The department chair shall submit the following information to the dean/director on or before March 15th: all the proposed faculty workloads for the department, a summary of the courses proposed for the coming year, and a summary of the scholarship and service to be performed by the department.

(c) Following approval by the dean/director, tenured and tenure-track faculty will be informed of their workload for the subsequent academic year no later than June 15th. Colleges may accelerate these timelines as necessary.

(i) When workload negotiations or revisions occur after June 15th, both the faculty and the administration have fifteen (15) working days to respond to these changes. Should either party not respond within fifteen (15) days, the last proposed workload plan shall be adopted.

14.4.6 Workload components of individual faculty within a department may vary from quarter to quarter and/or academic year to academic year to permit variations in emphasis across teaching, scholarship, and service responsibilities.

14.4.7 Faculty workload shall be determined with the expectation that tenure and tenure-track faculty will have the opportunity to meet the established criteria for reappointment, promotion, tenure, and post-tenure review. Unless otherwise requested by the faculty member and approved by the chair and dean, tenure-track faculty will be provided a minimum of six (6) workload units of scholarship per year.

14.4.8 Faculty who have externally funded research and/or service commitments shall be guaranteed the opportunity to buy out workload units as required to meet the commitments; provided that the overall

teaching, scholarship, and service needs of the unit can be met, as determined by the department chair and approved by the dean/director.

14.4.9 The Union recognizes the University's need for flexibility in determining faculty workloads as a result of unanticipated or emergency situations. When the need arises, a faculty member's workload may need to be revised. There will be consultation with the department chair and the faculty before a faculty member's workload is revised. When a workload is revised, the dean/director shall provide a copy of the revised workload to the faculty member as soon as practicable.

(a) Workloads regularly shift in response to unanticipated changes in teaching, scholarship, and/or service responsibilities. Any alteration which results in a shift in teaching, scholarship, or service loads by three (3) or fewer workload units within a category may be handled at the department chair's discretion without requiring the formal submission of a revised workload plan.

APPENDIX A

INSTRUCTIONAL WORKLOAD

1.1 In determining the appropriate teaching load in an individual faculty member's overall workload, and in determining the appropriate balance of teaching responsibilities across faculty within a department, faculty members and department chairs shall use the following guidelines for comparing different teaching environments historically used at the University:

1.1.1 Lecture/demonstration/laboratory/activities classes: 1 class hour = 1 workload unit. It is assumed that each workload unit includes an additional 2 hours of preparation time.

1.1.2 Applied Music (individual lessons): 3 class hours = 2 workload units

1.1.3 Student-teaching/field-experience:

(a) Student teaching/field experience

(i) Part-time campus supervisor: 1 workload unit = 15 enrolled student credit hours

(ii) Field supervisor: 1 workload unit = 15 enrolled student credit hours
When non-supervising faculty members are responsible for placement, additional workload units may be negotiated with the chair and dean and will be dependent upon the expected amount of time on task.

(iii) Faculty student observation: 30 hours spent in observation = 1 workload unit.

(b) Cooperative education supervision: 1 workload unit = 30 enrolled student credit hours

1.1.4 Individual study supervision (e.g., courses titled thesis or equivalent and individual/independent study or equivalent):

(a) Undergraduate level: 12 student credit hours = 1 workload unit

(b) Undergraduate level field and laboratory research: 8 student credit hours = 1 workload unit

(c) 500 level: 6 student credit hours = 1 workload unit

(d) 600-700 level (thesis or equivalent committee chair): 3 student credit hours = 1 workload unit

(e) 599-600-600.1 level (membership, other than chair, on thesis or equivalent committee): 6 thesis or equivalent committees = 1 workload unit

(f) In cases where departments have traditionally had difficulty predicting individual study loads, workload units assigned to a faculty member for individual study supervision may be calculated based upon the average of the faculty member's actual load during the previous three years, excluding time spent on sabbatical or leave.

1.1.5 Student Advising

(a) The advising of students is an essential function of faculty. Some advising is expected as a part of normal teaching load. Advising beyond the normal teaching load is recognized as an additional professional responsibility (see ARTICLE 12 – PROFESSIONAL RESPONSIBILITIES), and will vary between departments and faculty based on the needs of students and individual programs.

(b) Faculty with advising responsibilities greater than those associated with a normal teaching load may be assigned additional workload units for advising by their department chair in consultation with the faculty member and Dean.

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 - CURRENT FACULTY ASSIGNMENTS, FALL QUARTER 2013

Name	Course	Enrollment	SCH	Other Assignments	
				% Time	Activity
CARNS, David	CMGT 450 CMGT 495	31 7	124 7	10%	Program Coordinator, Student Advising, Committees, Scholarly Writing
PLUGGE, P. Warren	CMGT 445 CMGT 495	11 7	44 7	40%	Program Coordinator, Student Advising, Committees, Short Courses, Scholarly Writing
WHELAN, Michael	IET 301/526 IET 311 CMGT 444 CMGT 495	31 18 24 7	124 76 96 7	20%	Student Advising, Committees, Faculty Senate, Habitat for Humanity, Short Courses, Scholarly Writing
MARTIN, David	CMGT 265 CMGT 447 CMGT 495	34 24 7	136 96 7	20%	Student Advising, Committees, Mechanical Contractors Association

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 9 Month Salary	No. of 12 Month Appointments	No. of Resignations in past 5 years
Professor	2	$85,160*	0	0
Associate Professor	3	$72,607	0	0
Assistant Professor	0	0	0	0

*Note: This is a split position; two professors were on half time due to a phased retirement plan. A full 9 month salary is shown here for comparison purposes.

2. Briefly describe the benefits program for the faculty.

Summarizing information available from the Human Resources office, faculty benefits include the following:

- All faculty members with a 50% of fulltime or more are eligible for and required to participate in the retirement plan beginning the first day of eligible employment. Faculty contributions are 5% until age 35, 7.5% from age 35 to age 50 and 10% beyond age 50. Contributions are matched by the University, are vested immediately, and may be directed to one or more of three fund sponsors: TIAA-CREF, Fidelity, and/or Vanguard.
- All faculty are eligible to participate in a University sponsored deferred compensation or supplemental retirement plan. As with basic retirement funds, contributions may be directed to one or more of three fund sponsors: TIAA-CREF, Fidelity, or Vanguard.
- Comprehensive medical and dental insurance is provided to faculty members and their families for a nominal monthly premium.
- A $25,000 term life insurance policy and a $5000 accidental death and dismemberment insurance policy are provided by the University at no cost to the employee. Supplemental insurance policies for larger sums and/or dependent coverage are available at an additional cost.
- Limited long term disability insurance is available at no cost to faculty members; additional coverage is available at a reasonable cost.

As enumerated in a portion of ARTICLE 15 – COMPENSATION AND BENEFITS and ARTICLE 16 – SICK LEAVE/DISABILITY LEAVE of the Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013), benefits are described as including the following: (NOTE: Portions of the Collective Bargaining Agreement are reproduced here for convenience only. A complete copy of the Agreement is available online at https://www.cwu.edu/business/sites/cts.cwu.edu.business/files/09-13_CWU-UFC_Agreement_Final.pdf.

ARTICLE 15 – COMPENSATION AND BENEFITS

15.1 Insurance Benefits.

15.1.1 Long Term Disability Insurance. The University will reimburse eligible and qualified probationary, tenured, and non-tenure-track annually contracted faculty for the costs associated with purchasing long-term disability insurance, with a 90-day benefit waiting period, through the Washington State Health Care Authority ("WSHCA"). Eligibility and qualification shall be determined by the rules applicable to the long-term disability insurance plan. In the event a faculty member chooses, or can only qualify for, a WSHCA long-term disability insurance with a longer benefit waiting period, the University will reimburse the cost of such plan. Faculty members who elect a WSHCA long- term disability insurance plan with a benefit waiting period of less than ninety (90) days shall be responsible for paying the additional costs associated with their choice of plan.

15.1.2 Health Insurance. Faculty members will receive contributions toward their health insurance premiums in accord with the rates and policies determined by the WSHCA.

15.2 Retirement Contributions. For those faculty who participate in the University's retirement plan, the University will continue to make retirement contributions at the rate in effect immediately prior to the effective date of this Agreement. For those faculty members who participate in another retirement plan administered through the Washington State Retirement System, and who elected

at the time of hire to continue participating in such plan, the University will make the retirement contribution required by the respective plan.

ARTICLE 16 – SICK LEAVE/DISABILITY LEAVE

16.1 Sick Leave.

16.1.1 Departments shall handle internally time off for short term absences of faculty of up to two (2) work weeks in duration for illness, injury or disability by covering classes or other such methods as will meet department needs. The department chair shall be informed by the absent faculty member any time he/she shall need a short term sick leave absence.

16.1.2 Non-tenure-track faculty with quarterly contracts shall be entitled to up to two (2) workweeks of paid sick leave during the term of their contract. Any leave taken beyond two (2) workweeks in a quarter for the reasons described in Section 16.2 shall be unpaid and may, upon the recommendation of the department chair and at the discretion of the dean, result in termination of the faculty member's contract.

16.1.3 Non-tenure-track faculty with annual or multi-annual contracts, probationary and tenured faculty shall be entitled to paid sick leave of up to two (2) workweeks for each separate occurrence for the reasons described in Section 16.2.

16.2 Sick leave may be used during the period of a faculty member's appointment for the faculty member's own illness, injury or disability (including disability related to pregnancy); the need to care for a child under eighteen (18) years of age, or an older child incapable of self-care, with a health condition requiring treatment or supervision; and the need to care for the faculty member's spouse, domestic partner, parent, parent-in-law or grandparent with a serious health condition or emergency condition.

16.3 For absences of three (3) or more days, the University may require written medical verification of the reason for the faculty member's absence.

16.4 Short Term Disability.

16.4.1 Absences of longer than two (2) consecutive workweeks caused by a condition described in Section 16.2 will be considered short-term disability leave. Full time non-tenure-track faculty with annual or multi-annual contracts, probationary and tenured faculty shall be entitled to disability leave as provided in this Section.

16.4.2 Eligible faculty members must notify their department chair and the dean's office when they become aware of the need for any disability leave, and must provide any required written medical verification of the reason for the leave. The dean must approve all disability leave.

16.4.3 Amount of Short-term Disability Leave.

(a) Full-time non-tenure-track faculty with annual or multi-annual contracts shall be entitled to take short term disability leave for twelve (12) workweeks, or until the end of the quarter in which the disability occurs, whichever period is shorter.

(b) Probationary faculty shall be entitled to take short term disability leave for twelve (12) workweeks, or until the end of the academic year in which the disability occurs, whichever period is shorter.

(c) Tenured faculty shall be entitled to take short term disability leave for twelve (12) workweeks during any academic year.

16.4.4 Pay During Disability Leave. Faculty members shall receive their normal salary during any period of short term disability leave.

16.4.5 Unpaid Leave. Any disability leave permitted beyond the paid leave provided in this Section will be unpaid. Following all paid and any permitted unpaid disability leave, the dean may, at his or her discretion, terminate the contract of a non-tenure-track faculty member.

3. Comments, if any.

There are a number of factors that have enabled Central Washington University and the CMGT Program to attract and retain well-qualified faculty members even though salaries may be somewhat lower than those available in other areas. The quality of life factor is very attractive to many people. Central Washington University, beyond having a strong reputation as a quality institution, is located in Ellensburg – a smaller university community with an excellent public school system, relatively few and minor social problems, access to a wide range of outdoor recreational activities and a close proximity (2 hours or less) to a major metropolitan area (Seattle and surrounding cities). In addition, housing costs, while increasing, are still lower than in many metropolitan areas.

E. Evaluation and Promotion Policies

1. Faculty Evaluation

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

The evaluation procedure for faculty of the Construction Management Program is consistent with procedures for the University as a whole. The Professional Record (an extensive and standardized portfolio documenting teaching effectiveness, scholarly activity, and service participation) is the basis for evaluation at all levels of review. Teaching effectiveness is demonstrated by including peer evaluations of individual courses, along within required student evaluations of every course, in the Professional Record. (A standardized Student Evaluation of Instruction (SEOI) instrument is used for the student evaluation portion. A sample of this instrument, including summary results, is included as an Appendix in Volume II). Independent reviews of the Professional Record by the ETSC Department Personnel Committee and the ETSC Department Chair are mandatory; all tenured and tenure-track faculty may also prepare an individual written response to be included in the materials forwarded to the Dean. Recommendations and evaluations resulting from the departmental level of review are discussed with the faculty member before a recommendation for action is sent to the Dean of the College of Education and Professional Studies. After an independent review by the Dean, a recommendation is made to the Office of the Provost with regard to reappointment. Finally, the Provost writes an independent evaluation and submits recommendations of candidates through the President for recommendation of action by the Board of Trustees.

Once tenured, faculty member are reviewed once every five (5) years. The procedure utilizes the same Professional Record information, and independent Department, College, and University level processes, required of non-tenured faculty members. Promotion in rank is considered the equivalent of a post-tenure review.

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.

Fig. 23 - PROMOTION AND TENURE

Current Rank	No. Promoted	No. Tenured
Professor	0	0
Associate Professor	1	2
Assistant Professor	0	0

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

Tenure and promotion policies for the Construction Management faculty at Central Washington University are described in three (3) documents:

1. Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013)
2. College of Education and Professional Studies: Faculty Performance Standards for Reappointment, Tenure, Promotion, Post Tenure Review (June 18, 2014)
3. ETSC Faculty Handbook (May 23, 2014)

(NOTE: Portions of these three documents reproduced here for convenience only. Complete copies are available either online at www.cwu.edu, or from the ETSC Department Office and filed on a shared drive.)

The Collective Bargaining Agreement establishes two requirements related to tenure and promotion policies: 1) the definition of faculty ranks or titles (ARTICLE 8 – APPOINTMENTS), and 2) a requirement for developing tenure and promotion criteria and policies at the college and departmental levels (ARTICLE 20 – REAPPLOINTMENT, TENURE, PROMOTION, AND POST-TENURE REVIEW).

ARTICLE 8 – APPOINTMENTS

8.1 The available faculty ranks or titles shall be:

8.1.1 Tenure-track faculty ranks:

Assistant Professor

Associate Professor

Professor

8.1.1 Non-tenure-track faculty titles:

Assistant Professor (provided that this title shall be restricted to those non- tenure-track faculty members who held the working title of assistant professor as of September 2005)

Senior Research

Associate Research

Associate

Senior Lecturer

Lecturer

8.2 The minimum qualifications for academic ranks and titles shall be as listed below. The rank or title, and salary assigned to a new faculty member will be established by the dean based on consideration of the position, the minimum qualifications, the candidate's credentials, the University's needs and resources, and the recommendation of the department. Credit for prior professional academic experience shall be determined by the Office of the Provost, with input from the dean and department. Normally, new faculty members will be credited with no more than a total of two (2) years of prior experience towards tenure. All degrees referred to in this section must be granted by United States accrediting association approved institutions or equivalent. With approval of the Provost, professional experience and/or national reputation may be deemed equivalent to the minimum degree requirements.

8.1.2 Lecturer: At least a master's degree in the discipline.

8.1.3 Senior Lecturer: A minimum of five (5) years experience at the University, completion of at least one-hundred thirteen (113) workload units, and demonstrated excellence as determined through a

substantive review of the faculty member's cumulative performance conducted by the department and Dean. Lecturers who will meet the experience requirements at the conclusion of a quarter may apply for Senior Lecturer status according to the quarterly timelines established in the Academic Calendar. If granted, Senior Lecturer status shall take effect the following quarter.

8.1.4 Assistant Professor: The terminal degree relevant for the discipline. ABD candidates may be appointed to the assistant professor rank if there is reasonable expectation that degree requirements can be completed within one year of start date.

8.1.5 Associate Professor: The terminal degree relevant for the discipline and six (6) years of professional academic experience.

8.1.6 Professor: The terminal degree relevant for the discipline and ten (10) years of professional academic experience.

ARTICLE 21 – REAPPOINTMENT, TENURE, PROMOTION, & POST-TENURE REVIEW

21.1 Criteria.

21.1.1 Reappointment, Tenure, Promotion (hereafter referred to as RTP) and Post- Tenure Review (hereafter referred to as Post-TR) criteria shall be developed at the University, college and department levels.

(a) University criteria for RTP and Post-TR will be aligned with the institutional mission and accreditation standards and will strive to be reflective of the entire spectrum of academic disciplines. When these criteria are reviewed, faculty from all colleges will be invited to provide input.

(b) College criteria for RTP and Post-TR will be aligned with University criteria and reflect disciplinary standards for all departments within the college. These criteria shall be developed with input and consultation with department chairs and college faculty, and reviewed at least every five (5) years.

(c) Department criteria for RTP and Post-TR will be aligned with University and college criteria and will articulate disciplinary standards. The criteria will be submitted to the dean for approval and the dean will forward the criteria to the Office of the Provost for final approval prior to implementation. Department criteria will be reviewed at least every five (5) years.

21.1.2 Evaluations for RTP and Post-TR shall be made on the basis of these approved criteria and on the evidence provided in the Professional Record.

(a) For Post-TR, performance in the three elements of professional responsibility is typically expected during any five-year cycle, unless otherwise outlined in the accumulated workload plans.

21.1.3 The dean will provide the University, college and department criteria to tenure- track faculty with the initial contract letter. The dean will notify affected faculty of any changes to applicable criteria and, after discussing implementation with the department chair, will notify faculty of the ways in which those changes will be applied to pending probationary and Post-TR periods.

21.1 **…**

The CEPS guidelines (Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013)) specify in greater detail acceptable levels of performance and preferred areas of activity for faculty members who expect to receive reappointment, tenure, promotion, or a successful post-tenure review. Areas of activity and performance criteria are defined in a series of three (3) policy statements covering Teaching, Scholarship, and Service. Portions of this document related to policies and judging the performance level of each area are presented below:

…

Tenure and Promotion to Associate Professor. Tenure and promotion to associate professor occur at the same time. Both tenure and promotion to associate professor require that the faculty member has a demonstrated positive performance record of: (a) effective teaching; (b) an established scholarship record that includes peer-reviewed publications; and (c) significant service to the university, engagement with ones professional organizations, and increasing professional contributions to the community.

Promotion to Professor: Promotion to the rank of Professor recognizes the following:

(a) Exemplary performance in teaching, with demonstrated respect from faculty colleagues, administrators, and students. Exemplars in teaching include substantial evidence that the faculty member makes ongoing enhancements of his or her courses and instruction, stays up-to-date in the field and the pedagogy related to the specific field, makes substantive positive contributions to and enhances programmatic quality, and positively contributes to University, CEPS, CTL (if applicable), and program accreditation work. The faculty member also uses multiple assessment strategies to assess and promote student learning. Performance well exceeds the minimum requirements.
(b) Exemplary performance in scholarship, with an exemplary accumulated record of peer-reviewed publications or juried exhibitions/performances, and substantive scholarly contributions to the profession. Excellence in scholarship demonstrates that the faculty member well exceeds the minimum university and college criteria.
(c) Exemplary performance in service, with a record of sustained positive contributions to the University and CEPS, as well as to ones profession and the community. Performance well exceeds the minimum requirements.

…

Performance Criteria:
The following College of Education and Professional Studies (CEPS) criteria for Teaching, Scholarship, and Service are the minimum Faculty Performance Standards (Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013)).

From the CEPS Teaching Policy:

Merits of Teaching
In judging the merits of teaching, the following primary questions must be considered:

Syllabi
1. Does each course syllabus include course content, teaching methods, course outcomes, assessment strategies/measures, schedule of topics, and student requirements?

Curriculum
2. Does the faculty member frequently review and, when appropriate, revise his/her courses?
3. Has the faculty member developed and/or worked with other faculty members to develop new courses that improve the overall curriculum?
4. Has the faculty member been involved in a significant way with program review and, when appropriate, revision?
5. Has the faculty member made significant contributions to program development?
6. Does the faculty member frequently consult with other faculty members in both his/her own department and other departments concerning programs and/or courses to ensure curriculum coordination and quality?

Instruction
7. Does the faculty member use varied instructional strategies to enhance student learning?
8. Does the faculty member appropriately use information technologies in courses?
9. Does the faculty member delivery courses through distance education?
10. Does the faculty member teach at CWU sites beyond his or her "home base" to teach courses? (Example: "Home base" is Ellensburg; faculty member teaches a course at CWU-Wenatchee.)

Assessment

11. Does the faculty member use SEOI data, including student comments, for teaching improvement or enhancement?
12. Does the faculty member ask for peer review of his/her courses and teaching? Does the faculty member use peer review for teaching enhancement?
13. Does the faculty member use data from student practica, internships, and other field experiences to enhance his or her courses?
14. Is the faculty member involved in state, regional, and national professional societies, which provide standards for curriculum in the discipline? Does the faculty member use state, regional, and national standards to ensure that the curriculum is up-to-date and meeting student and employer (or graduate school) requirements?
15. Does the faculty member collaborate with colleagues to assess student program entry standards and exit criteria?
16. Does the faculty member have evidence that students have learned and have the knowledge and skills that are intended for the program/course?

Student Engagement

17. Does the faculty member involve students in undergraduate research and dissemination opportunities, such as SOURCE?
18. Does the faculty member involve graduate students in research and dissemination opportunities, such as conference presentations?
19. Does the faculty member provide quality course-related advising or mentoring to students?
20. Is the faculty member involved in student practica and internships?

Student Advising and Mentoring

21. Does the faculty member advise students in the major or minor? How many students? What evidence do you have that your advising is high quality and meets students' academic needs?
22. Is the faculty member available to advise students who are enrolled in his/her courses? How many students does the faculty member see during an academic year (estimate)? What evidence do you have that your course-related student advising meets students' academic needs?
23. Do you mentor students? What evidence do you have to show that your mentorship contributes to the students' academic and personal development?

Faculty Engagement

24. Does the faculty member seek and participate in professional development activities, which enhance his or her curriculum and instruction?
25. Does the faculty member positively contribute to the curriculum of the program by collaborating with his or her colleagues?

From the CEPS Scholarship Policy:

Merits of Scholarship

In judging the merits of the scholarship, the following primary question must be considered:

- Did the teacher/scholar contribute to the body of knowledge in the his/her field or related field? Did the teacher/scholar contribute to his/her students' knowledge acquisition, critical thinking and resolution skills, professional development, and/or quality of life enhancement? Did the teacher/scholar contribute directly or indirectly to the community at-large?

The following set of subsidiary questions should guide scholarship activities:

- Is there a field-related set(s) of questions, problems, or issues?
- Did the candidate develop a plan to address questions, problems, or issues?
- Did the candidate implement the plan(s) he/she developed?
- Did the candidate evaluate/analyze/synthesize the outcome(s)?
- Did the candidate address application(s) related to outcome(s)?
- Did the candidate share the results of the scholarship activity(ies)?

Dissemination of Scholarship
Scholarship is characterized by external peer review and dissemination outside the university. Section 15.3.1(c) of the Collective Bargaining Agreement speaks to scholarship and states,"…all professional activities leading to publication, performance, or formal presentation in the faculty member's field, or leading to external funding recognizing the faculty member's current or potential contribution to his/her field. Such activities include: manuscript submission, grant proposal submission; supervision of externally funded research projects; development of patentable inventions; and other original contributions, performances, exhibitions, or concerts appropriate to the faculty member's field."

Certain scholarship dissemination methods listed below may be more highly valued than others. The categories are ranked in order of relative significance (beginning with the most important) in the consideration for reappointment, tenure, and promotion. A teacher/scholar is encouraged to demonstrate scholarship dissemination in a variety of categories.

The dissemination of scholarship should be based on the following principles:

- The scholarship activity(ies) is(are) documented.
- The scholarship has an impact on the body of knowledge in the teacher/scholar's field or related field.
- The scholarship has an influence on a number of people in the same or related field.
- The scholarship undergoes a review process; that is, peer review, editorial review, or other appropriate professional review process.
- The composition of the audience is a criterion in the dissemination of the scholarship; that is, the audience should be scholars, practitioners, or preparing practitioners in the field or related field.
- The medium through which the scholarship is disseminated should have permanence; that is, electronic, hard-copy, presentation, products of creativity, and others.

Qualitative Assessment of Scholarship
The minimum requirement for scholarship is that it is documented. Other qualitative assessments include:
- dissemination medium: print, presentation, electronic, other;
- review process: peer; non-peer; invited; and
- audience: international/national; regional/state; local (generally considered service; if the teacher/scholar considers the local audience dissemination as scholarship, he/ she must provide a rationale to the departmental personnel committee for approval).

Categories of Dissemination
- Publications (books, monographs, book chapters, peer-reviewed journals, non-peer-reviewed journals, technical reports) [may include traditional print media, electronic media, other means as noted above under Dissemination of Scholarship]
- Presentations (international, national, regional, state, local professional conferences) Curriculum products for K-12 school districts and/or local/state/national curriculum development
- External/Internal Funding
- Creative Endeavors

Two Levels of Scholarship Dissemination

Note: All items of scholarship are 1) to be university-external published or disseminated, unless otherwise indicated, 2) have clearly attributable authorship on the item, and 3) related to the individuals unit of assignment (field or related field).

Peer reviewed publication(s) in professional journal(s) is/are required.

Scholarship Activities

Category A includes discipline-recognized products that are formally peer-reviewed and disseminated outside the university.

1. Refereed professional journal articles
2. Research monographs
3. Refereed scholarly books and chapters
4. Refereed textbooks
5. Juried exhibitions and performances
6. Published, peer-reviewed conference articles and proceedings.
7. Other peer refereed works may be considered by individual departments such as, such as:
    - Funded large-scale (monetary, national organization, and/or complexity of application), peer-reviewed external grant from a major agency, (e.g. NSF, NIH, DOE, ILMS, NEH, NEA) if the faculty member is the principal investigator, the co-investigator, or co-principal investigator
    - State/national adopted curricula
    - State/national adopted accreditation standards
    - Peer reviewed software applications
    - Editor of peer reviewed journal
    - Editor of a book

Category B or other categories specified by the departments, include formal activities that lead to or support Category A products or scholarly contributions.

1. Regional, national, or international peer-reviewed conference proceedings
2. Proposal submission for large scale, peer-reviewed external grant (for the principle or co-investigator).
3. Funded smaller-scale (monetary, national organization, and/or complexity of application), peer-reviewed external grant from a major agency, (e.g. NSF, NIH, DOE, ILMS, NEH, NEA) that are underway and results have proceeded to accumulate and the faculty member is the principal investigator, the co-investigator, or co-principal investigator.
4. Other grants and contracts (for the principle or co-investigator) that are underway and results have proceeded to accumulate
5. Publicly available research and technical papers and reports
6. Conference presentations (international, national, regional, state, local)
7. Textbook chapters
8. Externally published study guides that have a process for external review
9. Published book reviews
10. Encyclopedia entries
11. Contract reports
12. Other works may be considered by individual departments, such as:
    - Manuscript available through National Clearinghouse (e.g., ERIC or other electronic publications that are peer-reviewed)
    - Large-scale peer-reviewed external grants that are not funded (only one accepted as a Category B per review cycle).
    - Editor of book or special issue of journal
    - Book/magazine article for juvenile audience
    - Instructional/professional software
    - Editor of published conference proceedings
    - Reviewer/discussant/chair conference symposium
    - Editorially reviewed publications
    - CEPS Symposium, SOURCE, or other university-wide research dissemination events
    - Major technical reports (grant-related reports, accreditation self-studies, etc.)
    - Other peer reviewed works

Reappointment, Promotion, and Tenure
During the most recent five-year period, faculty members are expected to achieve a minimum of 5 items: at least 2 from Category A above and 3 from Category A or B. At least one item from category A must be a peer-reviewed publication in a professional journal related to one's teaching assignment at CWU. Department criteria may require additional items.

Post Tenure-Review.
Beginning with the most recent substantive review (tenure, promotion, and post tenure review), tenured faculty will be reviewed every five years. To meet the PTR scholarship standard, tenured faculty will produce at least five items from Category A or B during the previous five year review period, unless otherwise outlined in the approved accumulated workload plans. Scholarship standards for PTR will compare workload plans to accomplishments.

To be considered *excellent*, professors are expected to complete a minimum of eight scholarship activities with at least two Category A's.

Section 16.6 of the CBA identifies merit salary increases possible for full-professors effective with post-tenure reviews. Section 16.6.1 states, *"Those full professors who are judged at the conclusion of their Post-TR review to be excellent teachers **OR** to have excelled in scholarship/creative activity will receive a three percent (3.0%) increase in their base salary."*

Section 16.6.2 states, *"Those full professors who are judged at the conclusion of their Post-TR review to be excellent teachers **AND** to have excelled in either their scholarship/creative activity or service responsibilities will receive a five percent (5.0%) increase in their base salary."*

From the CEPS Service Evaluation Standards:

Merits of Service

Introduction

Service includes faculty contributions to the public, the university, and the profession (UFC/CWU, CBA, Section 14.3.3), as well as to agencies, businesses, industries, schools, communities, and professional associations. Service activities should be consistent with the university, college, and department's missions and goals. In most cases, service should be directly related to a faculty member's teaching assignment and scholarship interests. See Appendix A of the CBA for greater detail of service expectations.

Preamble

Service focuses on the application of one's expertise. Faculty service is intended to promote collaboration and collegiality in the development of new approaches and policy, new ways to apply established approaches, and enhance the shared governance of the institution. The hallmark of service lies in opportunities to contribute to students, colleagues, academic department, college, university, community-based groups, and professional societies and organizations.

Merits of Service
Faculty service contributes academic and professional expertise and effort to the university community, profession of scholars and to the citizenry. Section 15.3.2 of the Collective Bargaining Agreement speaks to public, university, and professional service. Samples of service include service to the department, college, university, profession, and community and involving service to/with students, colleagues, communities, and professional societies.

Post Tenure-Review.
For service, tenured faculty are expected to serve at the university, college, and/or department levels.

To be considered *excellent*, professors are to serve consistently on three or more committees at the University, College, and/or Department levels **AND** have develop and sustained at least one professional partnership within the community for three of the last five years or served on one state or national professional board or committee.

Section 16.6 of the CBA identifies merit salary increases possible for full-professors effective with post-tenure reviews. Section 16.6.1 states, *"Those full professors who are judged at the conclusion of their Post-TR review to be excellent teachers **OR** to have excelled in scholarship/creative activity will receive a three percent (3.0%) increase in their base salary."*

Section 16.6.2 states, *"Those full professors who are judged at the conclusion of their Post-TR review to be excellent teachers **AND** to have excelled in either their scholarship/creative activity or service responsibilities will receive a five percent (5.0%) increase in their base salary."*
…

The ETSC Faculty Handbook references the policies outlined at the University and College levels, clarifies and localizes some procedures, then adds information related to the relative importance to the ETSC Department of the teaching, scholarship, and service categories identified in the Professional Record. A summary of these relative weights are as follows:

Teaching Effectiveness (50%)
- Personal Statement of Teaching Effectiveness (15%)
- Student Evaluations (45%)
- Faculty/Peer Evaluations (10%)
- Continuous Quality Improvement (10%)
- Administrative Duties (20%)

Scholarly Productivity (25%)

Service to the Profession, University, and Community (25%)

More detailed and complete specifications regarding Reappointment, Tenure, Promotion, and Post-Tenure Review process is included in ARTICLE 21 of the Collective Bargaining Agreement Between Central Washington University And United Faculty of Central (October 2, 2009 through August 31, 2013)

F. Professional Development

Discuss institutional and departmental policies related to:

1. Consulting

Private consulting and outside work by faculty members and professional staff is encouraged by Central Washington University and the ETSC Department for the following purposes:

a. To maintain and develop the professional competence of faculty members as professional practitioners
b. To make available to the state and community professional services which the university and its personnel are especially well qualified to perform

There are certain restrictions placed on outside consulting activities. These pertain to the use of university facilities, interference with assigned duties, and the compatibility of the consulting work with one's professional capacity. It has been the experience of the faculty members in the CMGT Program that outside consulting is well supported at the department and college level.

2. Professional associations

The University and ETSC Department encourage membership and participation in professional associations. The University and the College allocate $1000 to each faculty member to be used for professional development. Professional dues, travel to attend professional association meetings, and workshops or seminars offered by professional associations are acceptable and common uses of these funds. Additional funds are available from Department and CWU Foundation sources as well. The University recognizes this participation and counts it under the Service category of each faculty member's Professional Record.

The Construction Management faculty members are all continuously involved at the state, regional, and national levels in a number of professional associations including: ASCE, AACE, ACCE, AGC, APWAWA, NAHB, MCA, ASC, Habitat for Humanity, LEED, NUCA and Sigma Lambda Chi.

3. Publications

The University, the College of Education and Professional Studies, and the ETSC Department all require faculty members to engage in scholarship. A necessary part of scholarship is dissemination of the results to external audiences through publication. The CMGT faculty members have been relatively active in this area, given the workload, promotion and tenure, and post-tenure review policies delineated above.

4. Research

In the State of Washington, the University of Washington and Washington State University have been designated as the major research institutions. Most of the state funding encouraging research is allocated to these two universities. Although research is encouraged by Central Washington University and the ETSC Department, and some grant money is made available, it is not as high of a priority as at other institutions. Heavy teaching loads, a lack of graduate students, and a lack of research facilities all reflect the lower priority levels assigned to conducting major research projects in the Construction Management Program. It should be noted, however, that this is consistent with the mission and goals of the program.

5. Continuing education

Construction Management faculty members are encouraged to participate in continuing education opportunities as a part of an ongoing professional development program. As a result of the proximity of the Seattle metropolitan area, professional association and industry affiliations, frequent presentations by construction practitioners on campus, attendance at professional seminars, workshops, and meetings, and through individual efforts, the faculty has been able to maintain a state-of-industry knowledge concerning construction topics. While funds are limited to carry out these activities, they have been available in sufficient quantities to maintain currency. The creation and funding of a CWU Foundation account for the benefit of the CMGT Program has helped stabilize the funding levels to support continuing education.

V. STUDENTS

V. STUDENTS

A. Admission Standards and Procedures

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

Admission to the Construction Management Program is governed by both the program, through a major application procedure, and by the university requirements as stated in the catalog. These two standards and procedures are summarized below (taken from the Student Advising Handbook and the University Catalog):

Program Admission: Admission to the university does not assure admission to the CMGT program.

Rationale: Requirements for admission to the program as a major have been established to assure that incoming students have an adequate background in mathematics, English composition and blueprint reading. The intent is to increase the chance of success of students once they enter the program and to manage limited program resources, such as computer workstations and laboratory equipment.

Requirements and Procedure: Admission to the program is typically a two-step process. The first step is to become a Construction Management pre-major and the second a Construction Management major.

A pre-major student generally has freshman or sophomore standing or is a recent transfer from a community college or another university. A pre-major has not completed the required coursework and applied for acceptance as a major. Pre-major students, with advisor permission, are eligible to enroll in 100 or 200 level CMGT courses and any non-CMGT course for which they have the prerequisites. Students *may apply at any time* for pre-major status by contacting their advisor and completing a pre-major application form.

A major in the Construction Management program is a student who has completed the coursework and accompanying requirements stated below and has been accepted into the major. Majors are eligible to register for upper level (300 and 400 level) CMGT courses with advisor approval.

- Deadline: Applications will be accepted and reviewed once a year. The deadline is 3:00 pm on October 15 (if Oct 15 falls on a weekend applications are due on Monday).
- Applications must be submitted to the Hogue Technology office, room 101A.
- Admission to the program is limited to 36 students per year.
- Although waivers may be considered, students must complete the following prior to applying for the major:

  English 101 and 102 (or equivalent) with a grade of "C" or better
  Math 153 and 154 (or equivalent) with a grade of "C" or better
  CMGT 265 or the course must be in progress, with a grade of "B-" or better.

Note: If a student is admitted to the major prior to the completion of CMGT 265 the student must obtain a minimum grade of "B-" in CMGT 265 to remain in the major.

Application Process: If applying for entry into the major, each student is required to submit the following by the application deadline:

1. A completed checklist, available near the end of this handbook.

2. A completed application for major form, available near the end of this handbook.

3. Unofficial copies of all transcripts, including transcripts indicating coursework taken at other institutions (A CAPS report may be used for the CWU transcript). The student must highlight all completed courses and corresponding grades on the transcripts that *pertain to entrance requirements for the major*. The latest CWU transcript must indicate that the student is in good academic standing, as defined by the catalog.

4. A specific, realistic academic plan prepared in table format and signed by the student's academic advisor that includes a quarter-by-quarter list of ALL remaining courses that will lead to graduation (a template is available near the end of this handbook, as well as a list of course offerings).

5. A current resume.

6. A Work Experience Detail form, available near the end of this handbook.

7. A signed business letter, no more than one page in length, addressed to the Construction Management Major Selection Committee, detailing the student's work experience, their academic goals and objectives and explaining why the student wishes to enter the CMGT program. The letter should also address the student's time to completion of the degree.

Construction Management Major Selection Committee
c/o "your advisor's name"

ETSC Department
Central Washington University
400 East University Way
Ellensburg, WA 98926-7584

Selection Criteria: Using the following objective criteria, the CMGT selection committee will determine the top 36 students for acceptance into the CMGT program each academic year. If not successful, students may retake classes and reapply the following year. Below is a score sheet which each application is scored:

Construction Management Major Application Score Sheet

Course	**Credits**	**Grade (e.g. 3.0, 3.3, etc)**	**Credits x Grade x 2**
MATH			
MATH			
ENG 101			
ENG 102			
			Sum/(credits); **8.00 pts possible**

Note: The math scores will be taken as the highest two grades in pre-calculus and calculus classes.

Time to Completion of Degree	**Possible Score**	**Score**
Three years	0	
Two years plus fall and winter quarter	0.25	
Two years plus one fall quarter	1.25	
Two years	1.50	
		1.50 pts possible

Work Experience (Include Work Experience Detail Form)	**Possible Score**	**Score**
No experience	0.00	
One summer, not construction related	0.25	
One summer construction-related experience, not with a construction company	0.75	
Two or more summers construction-related summer experience., not with a construction company	1.00	
One summer construction experience	1.25	
One summer construction experience plus one summer construction-related experience	1.50	
Two summers construction experience	1.75	
Six months or more continuous construction experience or three or more summers	2.00	
		2.00 pts possible

Letter	**Possible Score**	**Score**
No letter	0	
Unprofessional letter	0.10	

Three or more errors (unsigned, not dated, spelling/grammar)	0.20	
Two errors (unsigned, not dated, spelling/grammar)	0.30	
One error (unsigned, not dated, spelling/grammar)	0.40	
Excellent letter with no grammar/spelling errors	0.50	
		0.50 pts possible

Summary of Scoring

Item	**Possible Score**
GPA (in four courses above) x 2	8.00
Time to Completion of Degree	1.50
Work Experience	2.00
Letter	0.50
Total	**12.00**

Maintaining Major Status: In addition to meeting the academic standards of Central Washington University, once admitted to the CMGT program students are expected to meet the following standards specific to the program:

- A GPA of 2.50 (overall) must be maintained in all CMGT courses to remain in the major.
- A "C" grade or better must be achieved in CMGT 343, Construction Estimating I, in order to take CMGT 344, Construction Estimating II.
- A "C" grade or better must be obtained in CMGT 346 or CMGT 347, Construction Materials and Methods, in order to take 400 level CMGT courses.
- If a CMGT major withdraws from Central for more than one quarter he/she must reapply to re-enter the program the following October.
- A serious breach of ethical conduct will result in a student being dropped from the major.

University Admission: General Information:

Central offers admission to qualified students as they apply. All applicants must submit a completed CWU on-line or paper admissions application (the on-line application is preferred) along with a non-refundable application processing fee of $50. For fall quarter, the Admissions office responds to applications soon after Dec. 1 for students who apply before Nov. 15 and within four to six weeks for those who apply later. The priority deadline for fall quarter application for freshmen and transfers is April 1.

Freshmen Applicants: Freshmen applicants (students currently enrolled in high school or high school graduates who have earned fewer than 40 college credits after high school graduation) must send official copies of all high school and college transcripts, as well as ACT or SAT scores, to the Admissions office. Freshmen applicants are offered initial admission if they meet a minimum admissions index, which is determined by a formula that weights high school GPA and standardized test scores in a ratio of approximately 3:1. The formula was developed by the Washington Higher Education Coordinating Board (HECB). For the 2013-14 academic year, the minimum admissions index is 28. Freshmen applicants must also complete the following core courses in high school.

English, Mathematics, Social Studies, Science, Foreign Language and Fine and Performing Arts

Homeschool Applicants: Admissions applications from homeschooled students are evaluated on an individual basis. Students will be required to submit ACT or SAT scores, as well as any high school, homeschool, or college transcripts available. They may also be asked to submit additional information or essays.

Transfer Applicants: Transfer students who have earned 40 or more college-level credits (27 semester credits) must send official copies of all college transcripts to the Admissions office. Generally, transfer students who have completed at least 40 college-level transferable credits with at least a 2.5 cumulative GPA will be admissible. Students who have completed college-level math and English and those who have completed a Direct Transfer Associated degree (DTA) will do better in the comprehensive review process.

If your GPA is below 2.5 from any previous college attended, you are required to answer the application essay questions, and your application will go through the comprehensive review process. The admissions review committee takes into account your grade trend, the number of transferable credits you have completed and type of coursework completed, including college-level English and math completion.

Comprehensive Admissions Review Process: Central recognizes that many factors affect grades and test scores, so the University utilizes a comprehensive admissions review process. Freshmen applicants whose admissions index is below 28,

or who are missing any of the high school core course requirements or transfer applicants whose GPA is below 2.5 from any previous college attended will need to complete the essay portion of the admissions application. The application will go through the comprehensive review process.

Additional details pertaining to admission to Central Washington University can be found in the current university catalog.

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

General: Most transfer students arrive from one of the 27 community colleges within the State of Washington. Working agreements have been established between each of the six state universities (including CWU) and the community colleges regarding transfer credits. If a student completes the appropriate two-year transfer degree at a community college he/she will automatically meet the general education requirements at CWU. Many students choose to do so due to the lower cost of tuition at community colleges compared to the four-year universities. Since only a small fraction of the courses offered at these community colleges transfer directly as CMGT courses most transfers complete the ETSC and CMGT courses at Central Washington University.

Transfer students are granted junior standing within Central if they have more 90 or more credit hours accepted. The Admissions Office makes the determination pertaining to the acceptance of general education credits, per the agreement with each of the community colleges or four-year universities. Because of the large number of external transfers into the Construction Management program there are a disproportionate number of students listed as juniors and seniors. Even though these students have advanced standing at CWU they typically take from two to three years to complete the major requirements for Construction Management.

Individual Courses: Transfer credits for courses offered within the ETSC Department (CMGT, IET or SHM prefix) are accepted from other accredited two-year or four-year institutions on a course-by-course basis. Students transferring credits are required to present, to their faculty advisor, course outlines and other materials to demonstrate the equivalency of the course. The construction faculty reviews the material and makes a determination to either accept or reject the course(s) as equivalent to course(s) in the department. If the course(s) is equivalent to a CMGT required course or meets the intent of the required curriculum a course substitution form is completed and signed by the faculty advisor and approved by the ETSC Chair.

Transfer credits for other required courses within the Construction Management major (e.g. business classes, economics, accounting, etc.) are accepted by the CMGT faculty under one of two conditions. If the course is listed as a direct equivalent by the University it is automatically accepted as meeting the requirement. If the course is not listed as a direct equivalent but presented evidence indicates that the course meets the intent and rigor of the requirement a course substitution form is completed. Again, this must be approved by the ETSC Chair.

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

Although the program has grown from its inception, within recent years due to the economy the construction management program experienced a decline in applications to the program. The program continues to remain strong primarily due to an excellent reputation in industry. Even though the economy slowed, the demand for graduates and interns from the program remained very strong . As a direct result of this demand, the Construction Management program limits the number of new students entering the program to thirty six (36) each year. Applicants must have completed pre-calculus mathematics, English composition and blueprint reading courses. The intent of the process is to assure that new students entering the program will have an adequate academic background and an increased chance of success once in the program. In addition, the program has been capped in order to better manage limited program resources. After the applicants complete their application the applications are scored and ranked based on predetermined objective criteria (see section A.1 above) and the top thirty six (36) applicants are mailed letters of acceptance. This selection process has been in effect since the fall of 2002 and has proven very effective in maintaining program quality, consistent with the mission and goals. In the latest admission cycle, October of 2013, there were 46 applicants for the 36 allotted spaces in the CMGT program. As a result of this selection process incoming students are very well qualified and the attrition rate once they are accepted in the program is extremely small.

4. Comments, if any.

Graduates of the CMGT Program have been very successful over the years and students in the program have a very strong commitment to the major and to the industry. There appears to be a strong sense of "camaraderie" among the students.

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 2012-2013	ACT – SAT Scores		
	Verbal	Math	V&M
Beginners	498	519	1017
Internal Transfers	500	510	1010
External Transfers	467	489	956
Total	488	509	997

2. Comments, if any.

The data listed in Figure 24 above is for students admitted to the CMGT major during the 2012/2013 academic year. Students are classified as "beginners" if they are currently CWU students and are not changing majors, as "internal transfers" if they are currently CWU students who are withdrawing from a major to enter the CMGT program and as "external transfers" if they have attended another institution and are entering the major.

It should be noted that although most students take the SAT it is not a requirement to be admitted to Central Washington University.

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	2013	2012	2011	2010	2009
Undergraduates					
Freshmen	10	15	17	27	16
Sophomores	18	22	30	19	25
Juniors	32	33	26	36	24
Seniors	54	44	54	61	83
Total Undergraduates	114	114	127	143	148
Graduate Students	None	None	None	None	None
Masters					
Doctoral					
Total All Students					

The data in Fig. 25 includes majors and pre-majors

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.

In essence 100% of the students in the Construction Management major and pre-major are enrolled as full-time rather than part-time students. This is the direct result of the fact that Central Washington University is located in a smaller community and students move to Ellensburg to attend CWU. Since there are few full-time employment opportunities in Ellensburg, nearly 100% of the students are committed to taking a full course load.

A full-time undergraduate study load is defined by the University as 12 or more credits.

3. Comments, if any.

Most of the students come from the heavily populated areas on the west side of the state, near Seattle, or from the larger towns in eastern or central Washington, including Wenatchee, Yakima, Tri-Cities, Moses Lake and Spokane. Central Washington University is a state-funded institution with a significant differential between in-state and out-of-state tuition. As a result, very few students find it economically practical to attend CWU unless they are established residents of Washington State.

Also, it should be noted that the class standings listed in Figure 25 above (Freshmen, Sophomore, Junior, Senior) are defined by the University and do not necessarily represent the level of progress of an individual student in the CMGT program. Because many students transfer from community colleges they may enter the university as juniors and yet be new to the CMGT program.

D. Grading System

1. Briefly describe the institution's grading system.

The University's grading system is described in detail in the University catalog under "Grading Policies and Regulations" and is summarized below:

Grade Points

"Grade Points" are assigned to each grade as follows:

Grade	Grade Points per Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

The following symbols are also used. No "grade points" are assigned.

CR Credit
NC No Credit
S Satisfactory
U Unsatisfactory
AU Audit
W Complete withdrawal from the University
+W Uncontested withdrawal from a course
HW Hardship withdrawal from a course
I Incomplete
IP In Progress
NR No grade reported
NS No show

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

In order to enter the CMGT major a student must complete MATH 153 and 154, Pre-calculus, ENG 101 and 102, English Composition with a "C" (2.0 gpa) or better. In addition, CMGT 265, Blueprint Reading and Construction Graphics, must be completed with a "B-" (2.7 gpa) or better. Once accepted to the major, students must maintain a 2.50 gpa (overall) in CMGT courses. A “C” grade or better must be achieved in CMGT 343, Construction Estimating I, in order to take CMGT 344, Construction Estimating II and a “C” grade or better must be obtained in CMGT 346 or CMGT 347, Construction Materials and Methods, in order to take 400 level CMGT courses.

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

Academic excellence is recognized in two different ways by Central Washington University:

First, undergraduates who achieve a grade point average of 3.5 or higher will be named to the honor roll. To be eligible a student must complete a minimum of 12 graded credits in the quarter earned.

Second, students receiving their first bachelor's degree may graduate with distinction according to the following standards:
3.5 to 3.69 - cum laude
3.7 to 3.89 - magna cum laude
3.9 to 4.00 - summa cum laude
Cum laude, magna cum laude, and summa cum laude will be noted on the recipient's diploma and University transcript.

Other distinctions:
President's Scholars are those students who, in the current academic year, have cumulative GPAs in the top 1 percent of their respective college class. GPA is calculated by existing University policy.

Dean's Scholars are those students who, in the current academic year, have cumulative GPAs in the top 5 percent of their respective college class (but not including the top 1 percent.) GPA is calculated by existing University policy.

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

Scholastic standards addressing poor student performance have been developed by CWU. These are detailed in the University catalog under "Scholastic Standards" and are summarized below:

Academic standards are established by the faculty. The Vice President for Student Affairs has responsibility for implementing these standards. A student's academic standing appears on the quarterly grade report or unofficial transcript located on Safari.

Good Standing: A student is in good standing when both the quarterly and cumulative grade point averages (GPA) are 2.0 or higher.

Academic Warning: A student who has been in good standing will be placed on academic warning when the GPA for the previous quarter is below 2.0.

Academic Probation: A student who has been on academic warning will be placed on academic probation if either the quarterly or cumulative GPA is below 2.0.

Academic Suspension: A student who has been on academic probation will be placed on academic suspension if the GPA for the previous quarter is below 2.0. If the GPA for the previous quarter is 2.0 or above, but the cumulative GPA remains below 2.0, the student will remain on academic probation.

Immediately after grade reports are prepared, the Vice President for Student Affairs reviews the academic files of all suspended students and makes one of three decisions:

- The student may be allowed to register for one more quarter with an academic standing of probation.
- The student may be allowed to submit a petition presenting evidence of circumstances beyond the student's control which adversely affected the student's performance during the preceding quarter(s). If the petition presents convincing evidence of such extenuating circumstances, the student will be referred to the academic standing committee. The committee will hear the student's case and may decide to allow the student to enroll for one more quarter on academic probation.
- The student may be denied enrollment for one year, following which a written petition for readmission must be presented to the vice president for student affairs and enrollment management. Readmission, however, is not guaranteed. A letter will be sent to the student informing him/her of the vice president's decision.

5. Comments, if any.

- None

E. Academic Success and Failure

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

Fig. 26: Honor Roll Students

Year	Fall 2012		Winter 2013		Spring 2013	
	No.	%	No.	%	No.	%
Freshmen	0	0%	0	0%	0	0%
Sophomores	1	8.3%	2	20%	0	0%
Juniors	0	9.7%	5	18.5%	4	15.4%
Seniors	9	12.5%	5	10.4%	3	5.6%
Total	9	10.6%	12	14.1%	7	8.0%

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

Fig. 27: Probation Students

Year	Fall 2012		Winter 2013		Spring 2013	
	No.	%	No.	%	No.	%
Freshmen	0	0%	0	0%	0	0%
Sophomores	0	0%	0	0%	0	0%
Juniors	0	0%	1	3.7%	1	3.8%
Seniors	2	5%	1	2.1%	0	1.6%
Total	2	2.3%	2	2.3%	1	1.1%

The data in Tables 26 and 27 includes majors only (not pre-majors) and the percentages are based on the number of students for that particular class standing (Freshmen, Sophomores, Juniors or Seniors).

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 2012		Winter 2013		Spring 2013	
	No.	%	No.	%	No.	%
Freshmen	0	0%	0	0%	0	0%
Sophomores	0	0%	0	0%	0	0%
Juniors	0	0%	1	5%	0	0%
Seniors	5	29%	0	0%	0	0%
Total	5	8%	1	1.8%	0	0%

4. Comments, if any.

The numbers in Figure 28 represent the students (majors only) who left the CMGT Program at the end of the specified quarter. Note that this table represents the 2012/2013 academic year. Typically, retention, once a student enters the program, is 100%. For Fall 2012 attrition is slightly higher than normal. The reason for a 29% attrition during this period is due to one student who completely dropped from the program and the other students may have had one or two classes to complete a minor but never returned to complete those courses for the minor. In Winter 2013 there was one student who was accepted into the program and then denied due low performance in the major curricular courses. Since this time that student has re-entered the program and is on track to graduate in the Spring of 2015.

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.

Academic records for students in the Construction Management Program are maintained both by the ETSC Department office and by the faculty members in the program.

Record keeping begins for the faculty members when a student makes contact with their faculty advisor and expresses an interest in the Construction Management Program. An advising file is usually created for each student that includes a "Student Advising Worksheet", a checklist of the courses required for the major and possibly a "Basic and Breadth Requirements Checklist" that allow the faculty and student to monitor the advising progress. A copy of these forms is included in the Appendix (Volume II) of this report. Most students enter the program as a pre-major, which involves the completion of a simple Pre-Major Application form at any time. If the student has met the requirements to apply to the major the student must complete a "major application package" by the prescribed deadline that includes a Major Application Form, a Major Application Checklist, a letter of interest to the selection committee, a resume, a work experience detail form, a copy of the their transfer and CWU transcripts and a complete plan of study signed by their advisor. Once a major application package is reviewed it is distributed to that student's CMGT faculty advisor and included in the advising file for the student. A copy of these forms is included in the Appendix (Volume II) of this report.

Students currently enrolled at CWU may pre-register for the next quarter approximately two weeks prior to the end of the current academic quarter. Each instructor has available on "MyCWU" (the internet-based information system) a "preliminary class list" from the Registrar's office after pre-registration is complete. Registration itself takes place during the first week and one-half of the quarter and is open to both present and students new to Central. After registration is complete and the "add/drop" date has passed each an "official class list" is posted on Safari. Each class list includes the student's name, ID number, class standing and a code for their major/minor.

As each class is taught the instructor keeps a record of all scores for exams, projects, homework, presentations, quizzes, labs and papers throughout the quarter. These scores are converted to a letter grade at the end of each quarter and entered in the official Grade Roster on-line. A copy of the grades for each quarter is retained by each instructor and another copy is kept on file in the ETSC Department office for reference.

Each of the four CMGT faculty members (and all faculty members on campus) has a microcomputer in his/her office that allows access to MyCWU. This system contains a complete electronic academic record of every student at Central Washington University, including transfer transcripts, CWU transcripts and the courses in which each student is currently enrolled.

Each student has access to their academic record through their individual on-line computer account through a system called CAPS (Central's Academic Progress System). This allows each student to print or view a "CAPS Report" or “Course History” report, a computer generated printout that compares the student's progress, class by class, including transfer credits, to the required general education and major requirements.

A final graduation audit is performed by the Registrar after a student has applied for graduation to verify that the student has officially completed all requirements for a Bachelor of Science degree in Construction Management. The ETSC Department keeps a record of Construction Management graduates.

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

The Construction Management Program interfaces with the CWU record keeping system primarily through academic advising, as mentioned above. Academic records kept by the Registrar's office are also available to the faculty members through the on-line Safari system.

Courses completed at other two-year or four-year institutions may be evaluated by both the Registrar's office and by the CMGT faculty members. If the course has been predetermined by CWU to be equivalent to a course offered at CWU, that particular course will automatically be listed on the student's CAPS Report as meeting the requirement for the equivalent course at Central. A course taken at another institution that doesn’t directly transfer as an equivalent course at CWU may be evaluated by the student’s academic advisor if the student wishes to include the course in the major. If approved, the advisor completes a "Permit to Substitute for a Required Course" form which is then forwarded to the ETSC Department Chair and Dean of CEPS for approval. The form is then routed to the Registrar where the substitution is recorded on the student's transcript.

3. Comments, if any.

Every effort is made to keep records current and accurate and to maintain open lines of communication between the Construction Management Program, the ETSC Department, the CEPS and the Registrar.

G. Academic Advisement

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

Students entering Central Washington University as freshman who are undecided on a major are assigned to a general academic advisor from a pool of faculty members who volunteer and are specially trained in general advising. Once a student expresses an interest in the Construction Management Program he or she will be assigned to one of the four faculty members in the program. This faculty member will serve as the student’s advisor as long as the student remains in the CMGT Program. Initially the student will meet with the assigned faculty member who will establish an advising file, discuss the program requirements and the major entrance requirements and application procedure with the student. The student is directed to the on-line Student Advising Handbook, which is updated annually.

Transfer students from other institutions are advised in a similar manner. In addition, each faculty member has a list of the transfer agreements between each community college in Washington and CWU. These agreements list courses that transfer as direct equivalents (A copy of a transfer agreement is included in Volume II of this report).

Prior to pre-registration or registration for each quarter each student is required to make an appointment with their assigned program advisor to discuss academic progress and to plan the course of study for coming quarters. A simple advising worksheet has been created for this purpose, as previously mentioned. All Construction Management courses (those with a CMGT prefix) require an advisor's signature prior to enrollment, making it necessary for each student to obtain academic advising each quarter. In lieu of signatures students are given a "permission code" by the advisors so that they may register electronically.

Each advisor typically maintains a file for each advisee which contains pertinent information, including transfer transcripts, the advising worksheet, course substitution forms, etc. These are on file in the faculty offices.

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

In an attempt to divide the advising load equally among the faculty, students are assigned to one of the four faculty advisors as they enter the Construction Management Program based on the first letter of the student's last name. Current advisees are assigned as follows:

Faculty Advisor	Student Last Name	Number of Advisees (Approx.)
David Carns	A-F	35
Michael Whelan	G-L	35
David Martin	M-R	35
Warren Plugge	S-Z	35

3. Comments, if any.

Because the Construction Management Program is relatively small, students have excellent access to advisement and the faculty members have opportunities to devote the time necessary to provide proper advisement. In addition, because a student remains with the same advisor continuity is maintained as each student progresses through the program.

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.

There are four established student organizations that are sponsored by the Construction Management Program:

The Association of Construction Managers (ACM) is the name of the **Associated General Contractors (AGC)** Student Chapter and is directly sponsored by AGC of America and the AGC of Washington. This student club was organized in April of 1980 and membership consists of approximately 50 students. The purpose of the AGC Student Chapter is to provide the means for students to expand their knowledge of the construction industry through contact with AGC. Professor Warren Plugge serves as the faculty advisor.

The Central Washington University Chapter of the National Association of Homebuilders (NAHB) was established in 1990 and is sponsored by both the NAHB and the Master Builders of King an Snohomish Counties, the Seattle based chapter of the NAHB. This club was created for students with an interest in the homebuilding industry and has eleven members. Professor Michael Whelan serves as the faculty advisor.

Sigma Lambda Chi is an international honorary construction honor society available to students who maintain academic excellence. SLC was chartered at Central Washington University in June of 1999 and is dedicated to recognizing those students who have worked hard to obtain excellent grades in the CMGT Program. SLC has also hosted a "welcome back" barbeque for students in the fall and has performed a number of community service activities. Sigma Lambda Chi has about ten members. Professor Warren Plugge serves as the faculty advisor.

The Central Washington University Mechanical Contractors Association (MCA) Student Chapter was chartered in December of 2001 and currently has approximately ten student members. The group is sponsored both by the Mechanical Contractors Association of America and the Mechanical Contractors Association of Western Washington (MCAWW). The purpose is to provide an avenue for students interested in the mechanical contracting industry to interact with industry professionals and learn more about the opportunities available. The MCAWW has, over the past several years, travelled to Ellensburg and hosted a “Career Night” which involves industry professionals speaking to students about the opportunities and benefits of the mechanical contracting industry. MCAWW has also annually provides sponsorships for MCA student chapter officers to travel to the national convention and hosts students in Seattle for a variety of job-site field trips. In addition, Professor Carns serves as a speaker at annual MCAWW luncheon meetings in Seattle. Professor David Martin serves as the faculty advisor.

Some of the activities of these four organizations include:

- Meetings approximately twice per quarter
- Guest speakers from industry at meetings
- Sent 28 students annually to compete in the ASC Region VII competition in Sparks, Nevada
- Provide a means of obtaining student scholarships
- Community service activities
- Assist with student advisement through a major application workshop and mentor program
- Field trips to Seattle area construction sites
- Participation in the annual Construction Management Career Fair on campus
- Attend luncheons in the Seattle area to network with contractors

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.

All students are given the opportunity to evaluate each course and each faculty member through a "Student Evaluation of Instruction" form which is an electronic survey form administered through Canvas for each course. This form is completed at the end of each quarter by students and processed by Central’s Testing and Evaluating Services. The results are summarized and returned to the ETSC Department Chair and to the faculty member. This allows the students to indicate the instructor's strengths and weaknesses as well as provide input pertaining to textbooks, exams, homework, labs and general course content. A sample SEOI and summarized results are included in Volume II of this report.

In addition, students are invited to participate in the written exit survey and focus group exit interview conducted by the ETSC Department Chair (or Associate Dean of CEPS). Student comments from the survey and interview are used to make changes to the

curriculum. Students also are very involved in the review of candidates to fill a faculty vacancy. A student in the Construction Management program is a full member of the search committee and when a candidate interviews on campus student feedback becomes an important consideration during the final selection process.

Alumni are and will continue to be given the opportunity to evaluate the program curriculum through an alumni survey as part of the comprehensive assessment process. Refer to section IX A, General Analysis, Program Quality Assessment, of this report for more details.

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

The students in the Construction Management program are active on campus in a manner similar to the general student population. Students participate in intramural sports, varsity sports, student government and various clubs across campus. Some also have been involved as residence hall managers and others have worked for the "Observer", the campus newspaper, and Facilities Management at Central. Because the Construction Management student run Associated General Contractors of America club is recognized as a club, the students have to maintain a Senate position at the student senate to represent the club and communicate any information that pertains to the organization of the student club.

4. Comments, if any.

I. Graduates and Placement Data

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

Fig. 29: Number of Graduates

Year	2013	2012	2011	2010	2009
Associate	NA	NA	NA	NA	NA
Baccalaureate	21	29	40	36	44
Masters	NA	NA	NA	NA	NA
Doctorate	NA	NA	NA	NA	NA

Data is for each calendar year

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

Type of Employer	No. Graduates
Construction related employment	23
Construction or construction management firm	14
Material or equipment supplier	0
Owner (utility, R.R., etc.)	0
Design or development	0
Other	9
Continuing education	12
Other	
Non-construction employment	1
Seeking employment	6
No information	1
Total	30

Data in this table is the result of a written exit survey given to 30 seniors approximately two weeks prior to graduation in June of 2014. Some of the students were entertaining job offers at that time and others were actively involved in the search process. The majority of the 12 students that were continuing their education wanted their Leadership in Energy and Environmental Design (LEED) and one student indicated they were currently enrolled in a distance education Masters program in Project Management.

3. The average annual salary for the above graduates is $54,806

The average annual salary is slightly lower this year due to the fact that there were several students who indicated they would be doing an internship after they graduated, which meant they would be paid slightly less than a typical junior employee. Also, there were more students in this class who indicated that they did not have a job or did not want a job upon graduation or were continuing their education. Also, an alumni survey conducted in the Summer of 2014 indicates that 2014 graduates have an average annual salary of $58,400.

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

The alumni tracking system is designed to allow the program to maintain close contact with graduates, most of whom are currently working in the construction industry and are interested in sharing their expertise with the students and faculty in the program. This contact provides an avenue for information flow between the program and alumni and between the alumni and the program.

Alumni are followed through Central Washington University's University Relations/Alumni Relations Office, which keeps track of graduates university-wide. All alumni, program donors and others that are interested in the Construction Management Program are sent, free of charge, a copy of the Construction Management's "Building Times" newsletter. Copies of this newsletter are included in Volume II of this report.

As the Construction Management Program was undergoing major curriculum changes, an alumni survey form was developed and mailed to all graduates of record in the summer of 1987, 1991 and 1994. This was continued on a three-year cycle with surveys conducted in 1997 and 2000. The most recent survey used both hard copy and web-based format and the results were received and compiled in 2008. In the summer of 2014, the survey was administered through a web-based format, it was also pilot tested using our industry advisory board to assure the validity of the instrument. This survey, and future surveys, is designed to collect data from CMGT graduates in the latest five year period. This process is designed to gather information about the graduates' employment, as well as provide a means for graduates to evaluate curriculum and the Construction Management Program in general, based on their real-world experiences. In past years these results are incorporated into the Program Summary Assessment Report written each summer by the program coordinator. With a recent university effort to standardize the assessment plans for individual programs, future results will be presented in a program assessment review report in the spring of each year.

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

Copies of the exit interview questionnaire and alumni survey from spring 2014 are included as examples of the assessment instruments used for the program. Summary results from the 2014 Exit Interview Questionnaire are also included. A complete copy of the Assessment Report of Student Learning for the Fall 2013 is also included in the Appendix (Volume II) of this report.

The Exit Interview Questionnaire (Beginning on the following page, is a complete copy of the form distributed to graduating seniors as part of the focus group):

DEPARTMENT ENGINEERING TECHNOLOGIES, SAFETY AND CONSTRUCTION

Construction Management Exit Interview Questionnaire, 2014

This form is confidential and will be used for program assessment purposes. It is to be completed prior to graduation from the Construction Management program.

Name (optional) _____ Graduation Date _____

A. Background:

1. Why did you choose the CMGT program at CWU? _____
_____

2. What previous construction-related experience have you had? _____
_____

3. What other college level education have you had prior to coming to CWU?

_____ None

_____ Community College, No Degree

_____ Community College, Associate Degree

_____ Other University, _____ Number of hours

_____ University Degree, Program _____

4. How did you hear about the CWU program? _____
_____

B. Post-graduation employment:

1. Have you accepted a position? _____ yes _____ no (skip to question 3)

2. If yes, position title _____

Starting Salary _____ Starting Date _____

Company Name _____

Company Address _____

_____

- How would you best categorize this company (circle all that apply)?

General Contractor Specialty Contractor Supplier Owner Self-employed Other

- Type of work associated with your employer _____

(commercial, residential, heavy/civil, marine, utility, mechanical, electrical, industrial, etc.)

- How did you become aware of this position? _____

_____

- What factors were important in making this decision?

_____

3. If you have not accepted a position, what is your career objective?

_____

- Have you interviewed? _____ no _____ yes _____ number of companies

C. Continuing Education

Do you plan to obtain additional education? _____no _____ yes

_____ Graduate School - Type of Program _____

_____ Other BS program _____

_____ Special Certifications _____

D. Construction Management Education from Central Washington University

How strongly I agree that...					
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
my education experience at CWU prepared me to compete with graduates from other construction programs.	O	O	O	O	O
my studies at CWU contained a good balance between theory and application.	O	O	O	O	O
the CMGT program adequately developed my written communication skills.	O	O	O	O	O
the CMGT program adequately developed my oral communication skills.	O	O	O	O	O
the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	O	O	O	O	O
the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	O	O	O	O	O
the CMGT program prepared me well in the area of management concepts.	O	O	O	O	O
the CMGT program prepared me well in the area of materials, methods and plan reading.	O	O	O	O	O
the CMGT program prepared me well in the area of bidding and estimating.	O	O	O	O	O
the CMGT program prepared me well in the area of budgeting, costs and cost control.	O	O	O	O	O
the CMGT program prepared me well in the area of planning and scheduling.	O	O	O	O	O
the CMGT program prepared me well in the area of construction safety.	O	O	O	O	O
the CMGT program prepared me well in the area of surveying and project layout.	O	O	O	O	O
the CMGT program prepared me well in the area of project administration.	O	O	O	O	O

E. General Comments

1. What specific curriculum changes (course additions, course deletions, course changes) would you recommend?

_____

_____

_____

_____-

_____

2. What do you consider to be the major strengths or most positive aspects of the construction management program?

_____

_____

_____

_____-

_____

3. What suggestions (physical facilities, industry involvement, faculty, etc.) would you like to make relative to making improvements to the construction management program?

_____

_____

_____

_____-

_____

4. Other comments?

_____

_____

_____

_____-

_____

(End of Questionnaire)

2014 EXIT INTERVIEW QUESTIONNAIRE RESULTS

Summary of Results

On May 29, 2014, graduating seniors from the program were given a short (approximately 30 minutes) written questionnaire pertaining to the educational experience at CWU, their satisfaction with the CMGT program and their opportunity for post-graduation employment. Data from this survey has been compiled in a spreadsheet and the basic results are summarized below:

Results and Changes:

- 30 surveys were distributed and 30 were returned. Twenty-three of the 30 seniors (73%) had accepted a position in a management role with a construction-related firm at the time of the survey.
- The average starting salary was $49,662 per year.
- 23% indicated that they were hired by firms that do at least some commercial work, 23% by heavy/civil, 3% by companies that perform at least some residential work and 3% by a marine contractor.
- 12 of the 30 (44%) plan to continue their formal education in some manner.
- Overall satisfaction with the program ran very high, with 100% of the students indicating that the program at Central is competitive with other CMGT programs (nearly all 30 students ranked the program 4 or 5, with 5 being "strongly agree"). The average ranking was 4.2 of 5.
- Three areas were ranked lower: Scheduling, Written Communication and Project Administration with 3.5/5, 3.6/5 and 3.6/5 respectively.

Students were also allowed to make general or specific suggestions/comments. These varied greatly but in general the students appreciate the smaller class size and relationships with the faculty. Other comments centered on adding more construction software into the curriculum, providing additional lab times, making internships mandatory and an ability to find a job was noted as an asset to the program. Overall, the students were generally happy with the education they received from the program.

Beginning on the following page is a copy of the Alumni Survey Questionnaire that was used in 2014. (This survey is similar to the Exit Interview Questionnaire but was sent only to students who graduated from the program in the last five years):

CENTRAL WASHINGTON UNIVERSITY

CONSTRUCTION MANAGEMENT ALUMNI SURVEY

Dear graduate,

Thank you very much for participating in this survey of alumni of CWU's Construction Management program. We are currently going through a department review and are asking alumni for program input. Your responses will be strictly confidential. Thank you again for your time and unique insights.

1. What year did you graduate from CWU? _____

I. EMPLOYMENT

2. Are you currently employed in a construction-related position?

O Yes
O No - if No, please skip to Section **II**

2. Please indicate your current employment

□ Contractor
- □ Residential
- □ Commercial
- □ Heavy/civil/marine
- □ Industrial
- □ Utility

□ Subcontractor
- □ Mechanical
- □ Electrical
- □ Other subcontractor (please specify)

□ Material or equipment supplier
□ Owner (public agency)
□ Design or development
□ Construction management
□ Self-employed
□ Other, please specify: _____

3. How many employers have you had since graduation?

_____

_____

4. What is your current annual salary?

_____

_____

II. CONTINUING EDUCATION

5. Have you continued your education since graduating from CWU? (please check all that apply)

□ I have not engaged in any formal continuing education
□ I have taken seminars and short courses

□ I am pursuing or have obtained an advanced degree. If so, please indicate degree/s:

_____

_____

III. EDUCATION FROM CENTRAL WASHINGTON UNIVERSITY

6. How strongly I agree that...					
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
my education experience at CWU prepared me to compete with graduates from other construction programs.	O	O	O	O	O
my studies at CWU contained a good balance between theory and application.	O	O	O	O	O
the CMGT program adequately developed my written communication skills.	O	O	O	O	O
the CMGT program adequately developed my oral communication skills.	O	O	O	O	O
the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	O	O	O	O	O
the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	O	O	O	O	O
the CMGT program prepared me well in the area of management concepts.	O	O	O	O	O
the CMGT program prepared me well in the area of materials, methods and plan reading.	O	O	O	O	O
the CMGT program prepared me well in the area of bidding and estimating.	O	O	O	O	O
the CMGT program prepared me well in the area of budgeting, costs and cost control.	O	O	O	O	O
the CMGT program prepared me well in the area of planning and scheduling.	O	O	O	O	O
the CMGT program prepared me well in the area of construction safety.	O	O	O	O	O
the CMGT program prepared me well in the area of surveying and project layout.	O	O	O	O	O
the CMGT program prepared me well in the area of project administration.	O	O	O	O	O

IV. GENERAL COMMENTS

7. What specific curriculum changes (course additions, course deletions, course changes) would you recommend?

_____

_____

_____

_____

_____

8. What do you consider to be the major strengths or most positive aspects of the construction management program?

_____

_____

_____

_____

_____

9. What suggestions (physical facilities, industry involvement, faculty, etc.) would you like to make relative to making improvements to the construction management program?

_____

_____

_____

_____

_____

10. Other comments?

_____

_____

_____

_____

_____

V. CWU MISSION AND GOALS

11. These next few questions relate to CWU's Mission and General Education goals. How strongly do you agree that your education from CWU helped you...					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
become a responsible citizen	o	o	o	o	o
become a responsible steward of the earth	o	o	o	o	o
become a productive and enlightened (informed, good learner, insightful) individual	o	o	o	o	o
value different perspectives	o	o	o	o	o
appreciate the breadth and depth of scientific and human knowledge	o	o	o	o	o
increase your sense of the interconnectedness of knowledge	o	o	o	o	o
integrate knowledge from diverse fields to solve problems	o	o	o	o	o
increase your awareness of the many ways that knowledge evolves	o	o	o	o	o
ask incisive and insightful questions	o	o	o	o	o

Thank you! ■

(End of Alumni Survey)

A complete copy of the 2014 "Survey of Graduates" Report is included in Volume II of this report. The most important information is summarized below.

2014 CONSTRUCTION MANAGEMENT ALUMNI SURVEY RESULTS

Summary of Results

Alumni of the Construction Management Program in the Engineering Technologies, Safety and Construction Department of Central Washington University were surveyed during mid to late summer of 2014. The survey was sent by email though the use of Qualtrics software to collect the responses. Email addresses were data mined from CWU's foundation contact information. The survey items requested information about type of employment, duration and satisfaction of present position, and satisfaction with the Construction Management Program at CWU. A total of 233 surveys were sent to alumni using the email system.

Thirty-three usable survey responses were returned from alumni who graduated from the program between 2004 and 2014 (the last alumni survey was completed in 2006), for a response ratio of 13%. Of the 30 responses, 28, or 93% indicated that they were currently employed in a construction related field. The remaining graduates indicated that they were in a graduate program in Project Management and in Government Affairs.

Seventy four percent (74%) of the respondents indicated that they are currently employed by a general contractor, 34% indicated that they were employed by a commercial general contractor, while 40% indicated they were employed by a Heavy/Civil/Marine contractor and the remainder indicated that they are currently working for a material supplier, owner, etc. These results are included in numerical form in Table 1.

Most graduates have continued their education in some manner. Thirteen percent, (13%) indicated that they have either obtained or are pursuing an advanced degree, 43% indicated that they have taken seminars or

short courses, including LEED certification, and 40% indicated that they have not engaged in any formal education.

Table 1. Employment Type

Type of Employment	Number of Reponses
Contractor	**26**
Residential	0
Commercial	10
Heavy/civil/marine	12
Industrial	2
Utility	2
Subcontractor	**4**
Mechanical	1
Electrical	1
Other	2
Material or equipment supplier	**0**
Owner (public agency)	**0**
Design or development	**0**
Construction management	**0**
Self-employed	**0**
Other	**0**

Table 2 shows the results for measures of satisfaction with the CWU construction management program; overall and in specific areas. Most items indicate a very high level of satisfaction overall; ninety-two percent (92%) of respondents indicated that they agree or strongly agree with the statement "my education experience at CWU prepared me to compete with graduates from other construction programs". Other strong areas were identified as engineering concepts and applications and materials, methods and plan reading. The weaker areas were identified as budgeting, cost and cost control, project administration, oral and communication skills, management concepts and safety scoring at slightly below 80%.

Table 2. Responses to Statements

Key to numerical responses:

Strongly disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly agree	5

Statement	Average numerical response
my education experience at CWU prepared me to compete with graduates from other construction programs.	4.6
my studies at CWU contained a good balance between theory and application.	4.2
the CMGT program adequately developed my written communication skills.	4.0
the CMGT program adequately developed my oral communication skills.	3.9
the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	3.9
the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	4.2
the CMGT program prepared me well in the area of management concepts.	3.9
the CMGT program prepared me well in the area of materials, methods and plan reading.	4.3
the CMGT program prepared me well in the area of bidding and estimating.	4.2
the CMGT program prepared me well in the area of budgeting, costs and cost control.	3.6
the CMGT program prepared me well in the area of planning and scheduling.	4.2
the CMGT program prepared me well in the area of construction safety.	3.9
the CMGT program prepared me well in the area of surveying and project layout.	4.1
the CMGT program prepared me well in the area of project administration.	3.8

Annual salaries averaged around seventy-eight thousand dollars ($78,00) and ranged from thirty thousand dollars ($30,000) to one hundred and thirty thousand dollars ($130,000). Over the last five years graduate salaries have increased with experience (time since graduation) Graduates from 2014 have an annual average salary of $58,400, while graduates from five years earlier, in 2009, have an average annual salary of $80,000. Over the ten year span there 13% indicated that their salaries were over one-hundred thousand dollars ($100,000). These results are presented in Table 3 below.

Table 3. List of Actual Salaries and Year Graduated from 2009 to 2014

Actual Salaries ($1000), CMGT Alumni Survey 2014

Year of Graduation	High Salary (x$1000)	Intermediate Salaries									Low Salary	Avg. Salary
2009	80	80									80	80
2010	120	92	54								54	88.7
2011	85	80	75	70	65	65					65	73.3
2012	65	63	62								62	63.3
2013	61										61	61
2014	82	68	30								30	58.4

J. Other

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

One of the attractions of the program, from a student's standpoint, is the strong support from industry in the form of student scholarships. Each year the AGC of Washington Education Foundation makes available scholarships to juniors in the three construction management programs in Washington. Central students have been very successful in securing a share of these scholarships. Over the last couple of years Central scholarship awards to Central students has increased. Other scholarships students have received were from private corporations such as Fischer and Sons.

Awards for the 2013/2014 academic year are listed below:

Organization	Number of Recipients	Dollar Amount/Scholarship	Total Dollar Amount
AGC of WA Education Foundation	3	$3000	$9000
AGC of WA Education Foundation	1	$2500	$2500
Fischer and Sons	1	$1000	$1000

Awards for the upcoming 2014/2015 academic year are very similar.

VI. FACILITIES AND SERVICES

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.

FIGURE 31 - LABORATORIES

Building	Room Number	Approximate Area	Laboratory Name	Description	Courses
Hogue	103	1440 SF	Electrical and Mechanical Lab	Electrical equipment, mechanical equipment, stainless steel work tables	CMGT 320 CMGT 442
Hogue	104	725 SF	Construction Storeroom	Storage for ASC Competition materials, surveying equipment, soils equipment, material samples, Light Construction tools, some safety equipment	SHM 323 CMGT 245 CMGT 267 CMGT 346, 347 CMGT 460
Hogue	105	1400 SF	Concrete, Soils and Asphalt Lab	Concrete mixing, curing, and testing equipment, soils testing equipment, asphalt testing, stainless steel work tables	CMGT 450 CMGT 460 CMGT 461
Hogue	106	4400 SF	Interdisciplinary Lab	Large open area used for testing concrete beams, balsa wood bridges and general demonstrations	CMGT 245
Hogue	108	3080 SF	Woods Lab	Complete woodworking laboratory with tables saws, planer, large belt sander, panel saw, overhead router, etc.	CMGT 245
Hogue	118	1080 SF	Computer Lab CAD	27 student workstations	IET 161, CMGT 343, 344, 345, CMGT 441, 447
Hogue	120	1080 SF	Computer Lab CAD	20 student workstations	IET 161, CMGT 343, 344, 345, CMGT 441, 447
Hogue	300M	100 SF	Storeroom	Storage for ASC Competition materials	CMGT 495

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

Hogue 103, the “dirty lab”, Hogue 105, the “clean lab” and Hogue 300M, Storeroom, are used, maintained and controlled exclusively by the CMGT program. Hogue 104, the Construction storeroom, is used almost exclusively by the CMGT program and occasionally by the Safety program. All other laboratory space is shared with other programs in the ETSC Department. This other space is controlled by the ETSC Department and the Department Chair schedules the use of the rooms based on departmental needs.

3. Comments, if any.

With the construction of the Hogue Technology Addition and Hogue Technology Renovation in 2012 the CMGT program has nearly new, properly heated and cooled and well-furnished laboratory and storage space within the Hogue Technology Building. This space is more than adequate to meet the needs of the program, even if the program were to expand by increasing the number of students.

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).

FIGURE 32 - CLASSROOMS

Building	Room Number	Approximate Area	Capacity	Furnishings	Environmental Problems
Hogue	102	1360 SF	60	15 five-foot tables, 30 chairs, doc-cam projector, whiteboard, overhead projection system, computerized instruction station, projection screen, cabinets	None
Hogue	118	1080 SF	27	Tables, chairs, 27 computer workstations and doc-cam projector, whiteboard, overhead projection system, computerized instruction station, projection screen, cabinets	None
Hogue	120	1080 SF	20	Tables, chairs, 20 computer workstations and doc-cam projector, whiteboard, overhead projection system, computerized instruction station, projection screen, cabinets	None
Hogue	226	1260 SF		25 five-foot tables, 50 chairs, whiteboard, overhead projector, overhead projection system, computerized instruction station, projection screen	None
Hogue	227	1260 SF		25 five-foot tables, 50 chairs, whiteboard, overhead projector, overhead projection system, computerized instruction station, projection screen	None

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

The space is shared primarily with other programs in the ETSC Department, and is controlled and assigned by the ETSC Department Chair. Typically the Construction Management Program has scheduling priority for rooms 226 and 227.

3. Comments, if any.

Updated classroom furnishings, acoustical treatments, HVAC control, light control and computer controlled audiovisual equipment have been installed in all of these rooms with the completion of the Hogue Addition and Hogue Renovation in 2012.

C. Staff Offices

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

FIGURE 33 - STAFF OFFICES

Building	Room Number	Approximate Area	Occupant
Hogue	101 and 101A	540 SF	Susan Van de Venter (ETSC Department Office)
Hogue	300A	140 SF	David Carns
Hogue	300B	140 SF	Vacant
Hogue	300C	140 SF	Warren Plugge
Hogue	300D	140 SF	Michael Whelan
Hogue	300E	140 SF	David Martin

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

All construction faculty offices are grouped together and located in the Hogue Technology Building on the third floor. Secretarial services, a copy facility, and office supplies are on the first floor. Classrooms are located on the first and second floor and laboratories are located on the first floor.

The CWU Brooks Library is located approximately one block west of Hogue. Each faculty member is furnished with a Windows-based personal computer connected to the campus computer network. This allows access to the copy machine and a printer in the IET Department Office, to the campus IntraNet (including Safari, Canvas and Blackboard), to the online library catalog, and to the Internet. Each faculty computer is also remotely connected to the main department copy machine.

3. Comments, if any.

The faculty offices are very functional. They have good lighting, offer privacy, and have excellent heating and cooling, including operable windows. The only potential issue is that the offices are located on the third floor and the department office is on the first floor. However an elevator and stairwell are conveniently located nearby.

D. Library

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

- Library services are available at a central facility to all students, faculty, and staff who are currently enrolled or employed by the university. Most books and periodicals may checked-out in person using a student or faculty/staff library card.
- The library has an online catalog called Cattrax that allows users to search the library database for books, articles, and research information.
- The interlibrary loan/document delivery service is a method for obtaining materials that are not held by the library. This service is available to anyone holding a valid CWU library card and allows access to monographs, microforms, and photocopies of journal articles. These copies may also be requested electronically.
- Research resources include government documents, a music library, and a regional archives center.
- The library reserve system allows faculty to place materials, such as contract documents, plans, etc. on reserve at the campus library to be used in conjunction with a specific course. Students may then check out these materials, as long as they do not leave the library, for a period of two hours.

The general hours for the central library are:

Monday-Thursday	7:30 am to midnight
Friday	7:30 am to 9 pm
Saturday	11 am to 7 pm
Sunday	11 am to midnight

FIGURE 34 - LIBRARY HOLDINGS

	Since last accreditation (net)		Total	
	Books	Periodicals	Books	Periodicals
Construction	(239)	(73)	561	31
Architecture and Engineering	10,389	18,076	13,855	18,423
Business and Management	28,023	5,830	42,487	7,097
Total Institutional Library	456,987	35,000	978,535	65,000

NOTE: The numbers provided include data for all formats (print, electronic, etc.) and ownership status (i.e. library owns materials, library purchases access to content). Statistics may vary since the last accreditation cycle due to the incompatibility between current collection development statistics model and that used in the previous study. The holding information is based on the Library of Congress Classification System. Books and periodicals used for the values shown in Figure 34 include all those shown below for each discipline:

Construction:
- Subclass TH – Building construction

Architecture and Engineering:
- Subclass NA – Architecture
- Subclass T – Technology (General)
- Subclass TA – Engineering Civil engineering (General).
- Subclass TC – Hydraulic engineering. Ocean engineering
- Subclass TD – Environmental technology. Sanitary engineering
- Subclass TE – Highway engineering. Roads and pavements
- Subclass TF – Railroad engineering and operation
- Subclass TG – Bridges
- Subclass TH – Building construction
- Subclass TJ – Mechanical engineering and machinery
- Subclass TK – Electrical engineering. Electronics. Nuclear engineering
- Subclass TL – Motor vehicles. Aeronautics. Astronautics
- Subclass TN – Mining engineering. Metallurgy
- Subclass TP – Chemical technology
- Subclass TS – Manufacturing engineering. Mass production

Business and Management:
- Subclass HB – Economic theory. Demography
- Subclass HC – Economic history and conditions
- Subclass HD – Industries. Land use. Labor
- Subclass HE – Transportation and communications
- Subclass HF – Commerce
- Subclass HG – Finance
- Subclass HJ – Public finance

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

All books and periodicals are located in the CWU Brooks Library, approximately one block west of the Hogue Technology Building. The library is a full service system for the university as a whole. The ETSC Department and CMGT Program do not have any special or dedicated services.

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

The James E Brooks library allocates collection development funds to support academic programs across the institution. The amount of an allocation is based on a program's degrees offerings, student enrollment, average cost of materials in the subject area, curriculum and number of faculty. Decisions regarding the selection of materials are mainly based on faculty and student requests. Additional materials are selected based on reviews and recommendations from a variety of collection development aids. The library appoints a subject specialist to each academic department to monitor research interest and curriculum. The library subject specialist collaborates with the official Library Representative from the academic department to assess resource and instructional support needs. Any resource needs not met by the library's collection development budget are accessed through the library's interlibrary loan and consortium agreements. As a member of the Orbis Cascade Alliance the Brooks Library provides access the the book collections of 37 member institutions including major research universities like the University of Washing and University of Oregon. Additionally, the library provides access to the materials from over 72,000 libraries in 170 countries through their participation in OCLC interlibrary loan services.

The ETSC Department, as with all other departments on campus, is allocated a portion of the library's annual budget designated for the purchase of new books and periodicals. The ETSC Department is represented by a selected faculty member, who serves as the official Department Library Representative. Any faculty member in the ETSC Department, including Construction Management faculty members, may contact the Library Representative with a request to purchase new books or other resources for the library. The representative then compiles these requests and forwards them to the library. If the cost of new materials exceeds the ETSC Department's allocated funds, funds that have been allocated to other departments, but not used, are often made available to make up the difference. To date funds from these sources have been adequate to meet the needs of the CMGT program.

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

Significant writing assignments and/or oral presentations are required in CMGT 320 – Electrical Systems Design, CMGT 346 – Construction Materials and Methods or CMGT 347 – Heavy Civil Methods and Materials, CMGT 443 – Heavy Civil Utilities, CMGT 444 – Codes, Contracts and Specifications or CMGT 445 – Heavy Civil Contract Law, CMGT 455 – Principles of Construction Management or CMGT 456 – Principles of Heavy Civil Construction Management, and CMGT 485 – Construction Accounting, Finance and Contemporary Topics. In addition, projects are assigned in CMGT 343 – Construction Estimating I, CMGT 344 – Construction Estimating II or CMGT 345 – Heavy Civil Estimating II and CMGT 440, Temporary Structures. Students are expected to utilize library and Internet resources to prepare these assignments, presentations, and projects. Smaller projects in these and other courses require using the library and/or Internet as a reference source for completion. CMGT 265 - Blueprint Reading and Construction Graphics, for example, requires the students to visit the library and reference the Daily Journal of Commerce for the Puget Sound region, as well as utilize an online plan service to access construction drawings.

E. Audiovisual Services

1. Describe the audiovisual services of the institution.

The audiovisual services of Central Washington University include 1) Library Media Circulation with its collections of DVDs, films, and VHS tapes, 2) The Office of Public Affairs, which includes New Media, Graphic Production and Photography, Television, Video Production and Streaming and the University Website.

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

The Construction Management Program has numerous videotapes, CDs, and DVDs. Visual aids consist of numerous samples of construction materials and components, specifically mechanical and electrical equipment (ductwork, plumbing valves and fittings, breaker panels, conduit, etc.), classroom demonstration models, and complete sets of contract documents. All classrooms are equipped with projection equipment and the capability to interface with VHS, DVD, computer files, and Internet sources for in class presentations.

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

Course	Audiovisual Materials	Visual Aids
IET 161	Computer projection panel	Models
CMGT 245	DVDs	Samples of construction materials
CMGT 265	DVDs	Material samples, plans & documents
CMGT267		Surveying equipment
IET 311/312	Self-paced CD software	Statics & Strengths demonstrations
CMGT 320		Electric models & components
CMGT 343/344/345	Computer projection panel	Plans & documents
CMGT 346/347	DVDs	Material samples
CMGT 440/441	DVDs	Material testing demonstrations
CMGT 442/443	DVDs	Mechanical materials & components
CMGT 444/445	DVDs	Contract documents
CMGT 447	Computer projection panel	
CMGT 450	VHS tapes, DVDs	Soils testing equipment
CMGT 460/461	VHS tapes, DVDs	Concrete & asphalt components, testing equipment, admixtures, etc.

F. Computer Facilities

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

Students at Central Washington University pay a technology fee each quarter, and the funds from this fee have been used to establish a number of computer labs on campus. Each student is provided with an account and email address on the university server allowing access to email, the Internet, computer and multi-media workstations, laboratories, and computer software. The university-established Technology Fee Committee is chaired by a student who is appointed by the ASCWU president. The purpose of the committee is to oversee the use of the funds generated by the technology fees. Currently there are 24 computer labs with 542 computers located in fifteen buildings on campus, including Hogue Technology Building. Students have unlimited free access to computers in these labs when classes are not otherwise in session, the lab is open, and computers are available. Most labs are open 60 or more hours per week. Wireless access across campus and computer ports in dormitory rooms are available on campus for personal computers owned by students. In addition, 47 laptop computers with wireless capabilities are available for student checkout in the Student Union and Recreational Center building and 50 laptops are available in the library when those facilities are open.

2. Describe the computer facilities of the construction unit.

Each of the four Construction Management faculty members has a PC or Apple computer (laptop or desktop or both) located in his/her office, as well as an inkjet printer/scanner/fax/copy machine. Each computer is loaded with a current Windows Office Suite and other construction software as is appropriate (Timberline, Heavy Bid, Heavy Job, Primavera, MSProject, WoodWorks, etc.), and is connected to the university network allowing access to the Internet, email, and student records used for academic advising.

The primary university supported computer facilities available to CMGT students consist of two networked computer labs located in Hogue 118 and Hogue 120, which are open Monday through Thursday from 6:00 am to 9:00 pm, Friday from 6:00 am to 5:00 pm and Sundays from 1:00 pm to 9:00 pm. Facilities located in these labs are listed below:

- 27 Pentium-based, networked student workstations in Hogue 118 and 20 workstations in Hogue 120. Each workstation allows Internet and email access and includes typical office software (Word, Excel, etc.).
- 1 Pentium-based instructor workstation in each classroom. Similar to student workstations.
- Color overhead projection system.
- 1 HP black and white laser printer, located in the print room adjacent to rooms 118 and 120 (networked)
- 1 HP 48 inch color plotter, located in the print room adjacent to rooms 118 and 120 (networked)

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

The following Construction Management courses have regularly scheduled computer labs where the students meet each week in the lab:

Course	Software	Utilization
IET 161 - Architectural CAD	AutoCAD	Construction drawings: site plans, foundation plans, floor plans, building sections, details
CMGT 343 - Construction Estimating I	Microsoft Excel	Detailed quantity takeoff and pricing, summary sheets
CMGT 344 - Construction Estimating II	Timberline	Detailed quantity takeoff and pricing, summary sheets, overhead and profit, bidding procedures
CMGT 345 - Heavy Civil Estimating II	HCSS Heavy Bid and Job	Detailed quantity takeoff and pricing, summary sheets, overhead and profit, bidding procedures, and civil project management applications
CMGT 447 - Construction Planning, Scheduling & Control	Primavera P6	Logic networks, activity time & float calculations, resource loading & analysis, cashflow analysis

In addition there are a number of courses that involve assignments that require the use of the lab and computer software to complete. These typically include:

IT 101 – Computer Applications (Spreadsheets, word processing, graphing)
CMGT 265 – Blueprint Reading and Construction Graphics (Internet plan service assignments)
CMGT 267 – Plane Surveying (Traverse closure, earthwork calculations)
IET 301 – Engineering Project Cost Analysis (Spreadsheet calculations)
IET 312 – Strength of Materials (Shear and normal stress assignments)
CMGT 346 – Construction Materials and Methods (Reports, papers, etc.)
CMGT 347 – Heavy Civil Materials and Methods (Reports, papers, presentations, etc.)
CMGT 440 – Temporary Structures (Formwork design software)
CMGT 441 – Wood and Steel Construction (Woodworks wood design software)
CMGT 444 – Codes, Contracts and Specifications (Reports, presentations, contract document examples)
CMGT 445 – Heavy Civil Contract Documents (Reports, presentations, contract document examples)
CMGT 450 – Soils and Foundations (Sieve analysis assignment)
CMGT 455 – Principles of Construction Management (Papers, scheduling software, spreadsheet calculations, project management software)
CMGT 456 – Principles of Heavy Civil Project Management (Papers, scheduling software, spreadsheet calculations, project management software)
CMGT 460 – Concrete Construction (Formwork design)
CMGT 461 – Asphalt pavement mix assignment

Many others courses required for the Construction Management Program utilize spreadsheet applications, word processing, Internet access, and other basic software programs as a part of completing the course.

G. Placement Services

1. Describe the institutional placement services.

Located in the center of campus in Bouillon Hall, CWU's Career Services provides a variety of placement services for graduating students and for students seeking internships or career guidance and the staff works very closely with the CMGT program. Services provided to students include application letter and resume writing assistance, interviewing skills improvement, an online resume database, and general career counseling. Services provided to potential employers include arranging campus visits, establishing interview schedules for fulltime, summer, and co-op employment, disseminating information about employers, and posting employment opportunities across campus. Students have access to Career Services without additional charges.

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

Companies requesting interviews with Construction Management students through CWU's Career Services during the September 2013 through June 2014 time period include the following:

Absher Construction	PCL Construction Services, Inc.	
ACI - Active Construction Inc.	Pennon Construction	
Anning-Johnson Co	S.D. Deacon Corp. of Washington	
ANR Group Inc	SafeWorks, LLC	
Apollo Mechanical	Seattle City Light	
Auburn Mechanical	Sicklesteel Cranes, Inc.	
BMWC Constructors, Inc	Skanska USA Building, Inc.	
BNBuilders Inc.	Slayden Construction Group, Inc.	
Boeing Company, The	The Pape'Group	
Boise Cascade Company	The Walsh Group	
Dunkin & Bush	Turner Construction Company	
Envirocon, Inc.	U.S. Navy	
Exxel Pacific, Inc	University Mechanical Contractors	
Fisher Companies, Inc.	Valley Electric Company	
Forma Construction Company	Walsh Construction Co.	
Gary Merlino Construction Co.		
Georgia-Pacific LLC		
GLY Construction, Inc.		
Goodfellow Bros., Inc.		
Granite Construction Company		
Greenberry Industrial		
Hamilton Construction Co		
Harbour Homes, Inc.		
Hensel Phelps Construction Co		
Hermanson Company		
IMCO General Construction, Inc.		
JH Kelly		
Kiewit Corporation		
Lease Crutcher Lewis Builds		
Lydig Construction, Inc.		
MacDonald-Miller Facility Solutions		
Manson Construction Co		
Matrix Service		
McCarthy Building Companies, Inc.		
McKinstry Co		
Northwest Cascade		

3. Comments, if any.

For the past fourteen years Career Services has organized a Construction Management (and ETSC) Career Fair, held on campus in early November. In 2013, nearly 60 companies had the opportunity to visit with in excess of 100 students at this event.

VII. RELATIONS WITH INDUSTRY

VII. RELATIONS WITH INDUSTRY

A. Advisory Committee

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

Central Washington University Executive Council
Construction Management Advisory Council

Name	Corporate Affiliation	Type of Construction
Brandon Watts	Lydig Construction	Commercial general contractor
Pete Barlow	Contech Services, Inc.	Specialty contractor concrete
Edward Barry	WSDOT (Retired)	Owner
Brandon Drexler	Belsaas & Smith Construction	Heavy/Civil general contractor
Mitch Droz	Puget Sound Energy	Owner
Jason Gill	GLY Construction	Commercial general contractor
Chris Lang	Fisher & Sons	Commercial general contractor
Jake Smith	Shinn Mechanical	Mechanical contractor
Nick Lupo	Granite Construction	Heavy/Civil general contractor
Chad Webley	Gary Merlino Construction Co, Inc.	Heavy/Civil general contractor
Jesse Ellenz	Bellingham Marine	Specialty marine contractor
Chris Clayton	BN Builders	Commercial general contractor
Greg Toy	Greenberry Construction	Commercial general contractor
Steve Houston	Skanska Construction	Commercial general contractor
John Schmidt	Mortenson Construction	Commercial general contractor
Steve Sunich	SGS Associates	Construction Consultant
Dave Carns	CWU	Faculty member
David Martin	CWU	Faculty member
Warren Plugge	CWU	Faculty member
Michael Whelan	CWU	Faculty member
Michoan Spoelstra	CWU	Development officer
Tamara Butler	Mechanical Contractors Association of Western Washington	Academic relations director
Adrienne Woods	AGC Washington Education Foundation	Development director

2. Describe advisory committee procedures.

The Advisory Council consists of companies, alumni and individuals who wish to support the Construction Management Program through donations, time and expertise. The Executive Council is the actual working board of the Council and consists of the 23 individuals listed above. The Executive Council is presided by a chair, who is elected from the membership-at-large for a three year term. The council also has four working sub committees which include the Events and Outreach, Curriculum Review, Scholarship and Membership. The Executive Council meets approximately twice per year, in the fall and spring and additionally as necessary to plan special events or meet specific needs of the program. The mission of the Council is to support the Construction Management Program at Central Washington University in a variety of ways, including financial assistance, special projects, material and equipment donations, curriculum review and political assistance and support. The Council also provides help with graduate and summer employment, technical and management support, locating guest speakers, accreditation support, etc. The Executive Council is responsible for a separate account has been created through the CWU Foundation entitled "Construction Management Advisory Council". Funds solicited for the program through the Council are deposited in this account, which is in turn used to benefit the program and students. A typical meeting consists of the following agenda items (Minutes from the last three meetings, a sample agenda and a current treasurer's report are included in Volume II of this report):

- Treasurer's Report
- Special Event Planning, Including Fundraising
- Special Topics (i.e. – BIM, class decorum, etc.)
- Student Reports
- Program and Curriculum Review
- Committee Meetings and Reports

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

- Assisted with fundraising for the program, including funding of the successful endowed professorship campaign
- Assisted with non-monetary donations, such as software, lab and computer equipment
- Provided industry contacts to assist students with employment
- Reviewed credentials of applicants for faculty positions in the CMGT Program
- Provided advice on the selection of computer software for use in the program
- Organized and managed numerous alumni/contractor events, including the annual golf tournament fundraising event, dinner programs, etc.
- Assisted with on-campus accreditation visits
- Provided political support for important construction education issues, including funding for a new technology/CMGT building, which is currently in the design stage
- Helped to develop the curriculum for the heavy/civil option and reviewed specific course content
- Located and scheduled guest speakers for the program
- Provided plans and documents from construction projects for use in the classroom
- Supported the annual Construction Management Career Fair
- Planned and managed special events, such as the annual Alumni Cocktail Hour and the annual Alumni/Contractor Golf Tournament (this is the major fundraiser for the CMGT program)
- Provides three year review of core CMGT courses

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 (2013/2014)		Five Year Total	
	No.	Amount	No.	Amount
Construction Association	2	$26,500	4	$135,420
Contractors	36	$24,080	83	$100,057
Alumni	24	$10,355	63	$29,158
Faculty	2	$9,580	4	$18,122
Individuals	6	$3,500	31	$23,670
Other*	3	$4750	9	$19,950
Totals	81	$72,765	258	$625,504

* Estimated – this includes revenues generated from company attendance at the career fair.

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

There have been numerous non-monetary contributions to the program during the past five years. Some of these are listed below:

- Miscellaneous electrical fittings and conduit for CMGT 320 lab
- Annual donation of numerous booklets for design projects in CMGT 440, CMGT 441, CMGT 443, CMGT 461 and CMGT 460

- Aggregates and asphalt for use in the CMGT 460 and CMGT 461, Concrete and Asphalt Construction lab
- Numerous sets of construction plans and documents for use in various courses
- As part of CMGT 245 community members donate approximately 10% of the project cost to the program. These funds, which average about $2000-$3000 per year, are used to purchase tools and supplies for that course
- Plans and specifications from Granite Construction, Walsh Construction and Absher Construction, Fall 2013 for Reno Team practice.

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	Number of Participants	Faculty Participants
October 25 and 26, 2010*	Managing and Reducing Construction Costs, Dubai, UAE	30	Plugge
July 2013	Blueprint Reading Training for Energy Week	20	Martin
November 16 and 17, 2011*	Blueprint Reading, Central Washington AGC Chapter	4	Carns

* These courses were taught within the last five years, not within the past year. They are listed for reference only. See comments below.

2. Comments, if any.

Over the last five years there has been a significant drop in requests and opportunities for faculty to teach seminars or short courses outside the University. In the past many of the short courses provided by the faculty were facilitated through the Associated General Contractors (AGC) Washington Education Foundation.

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
April 2014	ASC Proceeding: Integrated Project Delivery	Not Sponsored		Plugge/Bender/Martin
April 2014	ASC Proceeding: Construction Safety Laboratory	Not Sponsored		Bender/Plugge/Rajendran
April 2010	ASC Proceeding: Creating Working Heat Pump Model	Not Sponsored		Carns/Plugge
April 2013	ASC Proceedings: Sustainable Design Strategies That Succeed	Not Sponsored		Bender/Plugge/Whelan
May 2014	SOURCE: Creating and Utilizing "Drain, Waste, and Vent Plumbing Trainers" for student learning	Not Sponsored		Carns/Plugge
June 2014	MCA Emerging Chapter Grant	Sponsored	$3,000	Martin/Carns
May 2014	SOURCE: Lean Construction Games in the Classroom	Not Sponsored		Martin/Plugge
May 2013	SOURCE: Creating and Utilizing a Working Refrigeration Model to Enhance Student Learning	Not Sponsored		Carns/Plugge
May 2013	SOURCE: Collaboration & Negotiation: Rethinking paradigms in construction through active learning	Not Sponsored		Martin/Plugge
May 2011	SOURCE: Analysis of Experiential Learning in Construction Management	Not Sponsored		Plugge
May 2011	SOURCE: Green Technology in Utility Construction	Not Sponsored		Plugge
May 2011	SOURCE: Frontend Loader vs. Hydraulic Excavator	Not Sponsored		Whelan/Plugge
September 2013	Safety Journal: Contract Issues and Construction Safety	Not Sponsored		Rajendran/Clarke/Whelan

	Management			
February 2009-2014	AGC Grant for Reno Competition	Sponsored	$1500/yr	Plugge
Summer 2013 & 2014	Kids in Construction Camp	Not sponsored		Plugge

2. Comments, if any.

E. Work Experience Programs

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

The Construction Management Program does not require a co-operative work experience program, however, the option exists for a student to register for IET 490, Cooperative Field Experience over the summer months, and obtain academic credit for the work experience. The number of credits that a student may earn is dependent upon the hours worked but averages about 1 credit per 40 hours of work. Prior to beginning the co-operative work experience the student, employer and university create a contract, complete with learning objectives and methods to meet those objectives. The employers and positions must be approved by the construction faculty member and students must submit daily logs, final reports and other methods to verify that the learning objectives were met. Each student is typically visited on the job site by a faculty member and at the end of the experience the employer submits a written evaluation of each student. Credits earned from the co-operative field experience may be used as an option to fulfill major requirements. There has been an increasing number of students who have chosen to take the IET 490, Cooperative Field Experience, this allows the student flexibility to take other courses to complete the CMGT program. In the summer of 2013 about fifteen students chose this option and several students are repeating their internships with the same company.

Implementing a mandatory program has been discussed with faculty and the Advisory Council over the years but such a program has not been created for a number of reasons. Although the formalized process of a co-operative program would provide some benefit, nearly 100% of the students obtain similar work experience during the summer months in a less formalized manner. In addition, the students would be required to pay tuition over the summer months and additional funding would be required to properly administer such a program. There have also been several requests within the Senior exit survey to make the Cooperative Experience opportunity mandatory as part of the program requirements in place of CMGT 245, Light Commercial Construction. Students have also been able to take CMGT 452 Sustainable Construction course, which incorporates the principles, of Leadership for Energy and Environmental Design (LEED)), in place of IET 490 and CMGT 245.

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

The Construction Management Program does not have a formal summer job program however students are strongly encouraged to work in the construction industry during the summer months. Nearly 100% of the students in the program are able to obtain construction-related experience for at least one summer. Many students have previous contacts with employers, some find opportunities through the program and some obtain employment by posting resumes on-line, by reviewing the available openings on the job board or by attending the annual ETSC Department and Construction Management Career Fair. This event is held in November on campus and is well-attended by construction companies recruiting to fill summer positions.

Since the summer job program is not formalized records are not officially kept concerning the number of students and companies involved, however the following estimate is provided:

Summer 2013

- 100 students
- 60 companies

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 Construction Management Program offers a variety of activities to assist individual employers with the job placement process:

- Numerous companies contact the faculty directly, expressing an interest in recruiting on campus. The faculty members arrange a time and date for the company representatives to make a presentation to the students in the program, usually in the evening. This is done in addition to efforts by Career Services. These seminars are coordinated a construction faculty member.
- Companies also hold recruiting seminars to assist students by providing real world information on interview skills, resume building and basic job skills coordinated by the faculty.
- Written and verbal assessments of the capabilities of individual students are provided to employers by faculty members.
- All job openings are posted on the job bulletin board located in the Hogue Hall. These openings are also announced to students.
- The Mechanical Contractors Association of Western Washington (MCAWW) hosts an annual "Career Night" on campus, coordinated by the construction faculty. This event, which focuses on opportunities for student and graduate employment in the mechanical contracting industry, involves a presentation and question and answer session.
- In the last year the Associated General Contractors of America (AGC) has held a Construction Leadership forum in Seattle, Washington to get students to meet contractors and take job site tours.
- Industry professionals are often invited into the classroom as guest speakers to make a presentation on a contemporary construction topics or projects. Many times a portion of each presentation is dedicated to student recruitment. Most recently companies have been on campus to discuss project delivery (i.e. Lean Construction) and Building Information Moldeling (BIM)

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

The Associated General Contractors of Washington has made available a means of posting student resumes on-line, as has the National Association of Homebuilders. In addition, as mentioned earlier, a coordinated effort is underway with the MCAWW to develop an ongoing relationship. This recently involved students attending meetings in Seattle with industry members. Also, as mentioned above, the MCAWW hosts an annual "Career Night" on campus. In addition, Career Services on campus has developed an online system for both employers and students to post career opportunities and resumes in a searchable format. Students and employers can use the website at http://www.cwu.edu/career/. In addition to career services, the program is working with the National Utility Contractors Association of Washington (NUCAW) to meet with employers with the public sector and provide scholarships to students interested in Public Works construction management.

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.

- Associated General Contractors (AGC) of Washington and AGC of America
- Mechanical Contractors Association of Western Washington (MCAWW) and the Mechanical Contractors of America (MCA)
- Sigma Lambda Chi international honor society

The sponsoring chapters of the AGC and MCA all provide guest speakers for student meetings, arrange for student field trips to construction sites, provide assistance in the form of scholarships, provide help with job placement, provide funding for student competitions, invite student members to attend industry association meetings and provide educational opportunities through training programs. Sigma Lambda Chi has provided the means to recognize academic excellence in the Construction Management program and allows interested students to participate in community service projects.

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.

Course	Date	Location	Number of Participants
CMGT 442	Febuary 3, 2014	CWU Physical Plant	28
CMGT 442	Febuary 19, 2014	Hogue Hall Mechanical Tour	28
CMGT 442	March 3, 2014	CWU Science Mechanical Tour	28
CMGT 461	May 22, 2014	Granite Construction Plant Asphalt Lab Tour	17
CMGT 461	May 8, 2014	Granite Construction Plant Site Tour	16
CMGT 460	May 6, 2014	Ellensburg Cement Products Plant Tour	19
CMGT 443	May 7, 2014	Ellensburg Waste Water Treatment Plant	12
CMGT 443	April 23, 2014	Puget Sound Wildhorse Windfarm Tour	12
All	Nov. 22, 2013	Sound Transit University of Washington Station Tour	12
All	Nov. 22, 2013	Amazon Urban Campus Building, GLY Construction	12
CMGT 495	Nov. 22, 2013	Seattle Catholic Project, Sellen Construction	7
CMGT 495	Jan. 17, 2014	UW Bothell Science Building, Lease Crutcher Lewis	7

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

Lecturer	Topic	Date	Course
Karl Lilquist	Testing Slope Stability	October 9, 2013	CMGT 450
Mark Sikkema	Geotextiles	October 29, 2013	CMGT 450
Kirk Skinner	MSE Walls	October 29, 2013	CMGT 450
Scott Hannah	Nuclear Density Testing	October 30, 2013	CMGT 450
Patricia Galloway	Contract Law	November 7, 2013	CMGT 444/445
Rich Wells Blaine Wolfe	Reno Competition Preparation	November 7, 2013	CMGT 495
Steve Sunich	Scheduling	November 18, 2013	CMGT 447
Nick Lupo, Chad Webley and Kyle Smith	Reno Competition Preparation	January 9, 2014	CMGT 495
Justin Anderson, Jason Halvorsen, Steve Mettie	Reno Competition Preparation	January 16, 2014	CMGT 495
Jason Hall	Victaulic Couplings	February 24, 2014	CMGT 442
Aaron McCain	Soil Freezing	February 25, 2014	CMGT 450
Carrie Boetcher and Jeff Bird	Lean Construction	February 28, 2014	CMGT 455/456
Bill Lovell, Joey Huerta and Hunter Sylfield	GPS Surveying on CWU Campus	April 16, 2014	CMGT 267
Darren Leary, Joshua Cudill and Jim Hickernell	Importance of Good Communication in Construction Operations	April 2, 2014	CMGT 485
Damon Socha	Building Information Modeling: CWU Science Building	May 26- June 3, 2014	CMGT 460
Mike Poppoff	Concrete Applications	May 20, 2014	CMGT 460
Jim Tobin	Concrete Applications	May 13, 2014	CMGT 460
Tyler Welch	Concrete Construction	May 6, 2014	CMGT 460
PCL Construction	Resume and Job Skills	October 7, 2013	N/A
Skanska Construction	Recruiting	October 9, 2013	N/A
Kiewit Infrastructure	Recruiting	October 16, 2013	N/A
Granite Construction	Recruiting	October 21, 2013	N/A
Mortenson	Recruiting	October 22, 2013	N/A

MCAWW	Mechanical Contractor Info Night	October 23, 2013	N/A
Sellen Construction	Recruiting	October 28, 2013	N/A
BN Builders	Recruiting	October 29, 2013	N/A
Anderson Construction	Recruiting	October 30, 2013	N/A
JR Abbot	Recruiting	November 4, 2013	N/A
Hensel Phelps	Recruiting	November 5, 2013	N/A
Turner Construction	Recruiting	November 6, 2013	N/A
Walsh Pacific	Recruiting	November 12, 2013	N/A
Bouten Construction	Recruiting	November 13, 2013	N/A
IMCO Construction	Recruiting	November 19, 2013	N/A

VIII. PUBLISHED INFORMATION TO THE PUBLIC

VIII. PUBLISHED INFORMATION TO THE PUBLIC

A. Selected Material

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

There are a variety of materials pertaining to the Construction Management Program that are distributed to the public which can all be accessed through the Central Washington University website at www.cwu.edu:

- The University Catalog (hard copy and on line)
- The Central Washington University website and the Construction Management Program website (contained within the CWU website)
- Student Advising Handbook, Construction Management Program (on the website and a hard copy is available on request)
- Construction Management Program information sheets
- Construction Management Advisory Council brochure
- ETSC Department and Construction Management Career Fair posters and postcards
- "Building Times" newsletter (distributed to alumni and program supporters in hard copy format and online)
- Golf tournament invitation (distributed to alumni and program supporters in hard copy format and online)
- Invitation to other alumni events (distributed to alumni and program supporters)

B. Method of Material Selection

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

Any information contained in the University catalog, including Construction Management Program requirements and general program statement, must be approved by the ETSC Department and also by the Registrar's Office prior to publication, both in hard copy and electronic format. Other materials that pertain to the CMGT Program originate at the program level and are typically created by the construction faculty with input from appropriate parties. Brochures and other general mailings are reviewed and approved by the University Relations and often produced with assistance of the Graphics Production Department. Career fair posters and postcards are created and distributed by Career Services. Official university logos and banners have been approved for university publications, however there are rules that indicate how these graphics may be used to represent the university.

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

The program faculty members typically work with appropriate university personnel to select and create the materials for publication. Other personnel on campus and/or industry representatives are often instrumental in selecting material for special projects. Any artwork used with the University logo has to be approved by Public Affairs to assure it meets the standards for the University.

C. Methods of Distribution

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

Central Washington University's Duplicating and Printing, typically prints brochures and similar publications. The "Building Times" newsletter, special event invitations, Student Advising Handbook and other smaller publications may be reproduced in the ETSC Department office or contracted to a local duplicating service.

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

A variety of methods are utilized to inform the public that information on the Construction Management Program is available. These methods include: direct mailings, the university (and CMGT) website, posting within the ETSC Department office, career fairs, distribution at meetings and direct faculty interaction with students entering the program, including summer advising sessions for freshmen and transfer students.

IX. QUALITY IMPROVEMENT PLAN

IX. Quality Improvement Plan

A. Strategic Plan

1. Provide a copy of the construction educational (degree) program's strategic plan.

The program's strategic plan is outlined in five (5) goals which are in line with the University's and Department's mission to prepare students for enlightened, responsible, and productive lives; to produce research, scholarship, and creative expression in the public interest; and serve as a resource to the region and state through effective stewardship of university resources.

The Construction Management program administers the University's strategic plan through its five program goals that align with within the core themes of teaching and learning, scholarship and creative expression, public service and community engagement and resource development and stewardship. The goals for the program or the strategic plan are timeless and stated below:

- Goal A: Improve the quality of instruction within the program.
- Goal B: Provide support for the construction industry.
- Goal C: Measurably improve the overall quality of the construction program.
- Goal D: Support professional development for the program faculty.
- Goal E: Continue to improve the heavy/civil construction option within the program.

2. Describe the process used by the construction unit to ensure that the educational (degree) program has adequate resources to achieve its mission.

The primary mission for the Construction Management Program is to provide the highest possible quality general construction education to undergraduate students who are preparing for careers in the construction industry. The second mission of the program is to maintain ongoing contact with the construction industry and provide support for this industry.

There are several processes in place to ensure the Construction Management Program has adequate resources to achieve the mission. Those processes include a strong advisory council, outstanding professional and financial support from the industry and a newly constructed facility with state of the art classrooms and labs. In addition to industry support, the program also has the support of the Dean, Provost and President which recognizes the Construction Management program as one of the best programs on campus and a leader within the University.

3. Describe the involvement of all constituencies (faculty, students, staff, alumni, industry advisory board, and employers of graduates) in the development of the construction educational unit's strategic plan.

The Construction Management (CM) program involves the faculty, students, staff, alumni, industry advisory board and employers of the graduates in the development of the strategic plan in many ways through constant communication and evaluation of the program. The construction faculty are the primary conduit for the maintenance and development of the strategic plan. Faculty are involved at many different levels through sitting on committees at the program, department, college, university, national and international level to provide input into maintaining and developing the strategic plan and its goals. Faculty are instrumental in developing courses, advising students and maintaining contact with the industry to assure the goals of the program are being met.

As Construction Management students maneuver through their academic career, which is closely monitored by their CM advisors, they provide input and insight into general courses, student organizations and the goals of the program. Students are continually being assessed in each class and as graduates the program also maintains unique relationship with the students once they graduate and begin their careers. The CM staff which is shared with the ETSC Department are involved in many ways through the administration of program courses, maintenance of labs, equipment and software and provide support to the general management of the program. The alumni are an integral part in the maintenance and development of the strategic plan especially through their involvement and participation in our career

fairs and through the industry advisory board. Many of our alumni return to recruit our students, provide instruction in our courses and provide information for professors to use in courses.

The industry advisory board is involved in the strategic plan through the process of making decisions on how the plan would be administered and maintained. This is done through four sub committees within the advisory board which include Events and Outreach, Curriculum Review, Scholarship and Membership. As mentioned above many of the employers of the graduates are typically graduates of the program. The CM program typically has close to a 100% placement rating each year for its graduates, which is an indication of the strength of the strategic plan currently in place.

B. Assessment Plan

1. Provide a copy of the construction educational (degree) program's Assessment Plan that at a minimum includes:

a. Mission Statement of the Construction Educational (Degree) Program;

The primary mission for the Construction Management Program is to provide the highest possible quality general construction education to undergraduate students who are preparing for careers in the construction industry.

The secondary mission is to maintain ongoing contact with the construction industry and to provide support for this industry.

b. Educational (Degree) Program Objectives of the Construction Educational Program;

The CMGT program's objectives are simply stated within the goals for the program. These goals as shown below are assessed and measured each year.

- Goal A: Improve the quality of instruction within the program.
- Goal B: Provide support for the construction industry.
- Goal C: Measurably improve the overall quality of the construction program.
- Goal D: Support professional development for the program faculty.
- Goal E: Continue to improve the heavy/civil construction option within the program.

c. Learning Outcomes of the Construction Educational (Degree) Program;

The learning outcomes or program goals for CWU's CMGT program are dynamic and change to meet the needs of the students, the industry and the program, yet are always written to support the mission of the program. The program goals are supported by a number of very specific and measurable objectives. The assessment program was developed to review the program goals and objectives and student learning outcomes to make changes to the program that will reinforce and strengthen the goals and objectives. As the needs of the program change the goals and objectives are re-written to reflect these needs, given the available resources. Our method to record specific changes is a form entitled "Report of Change". This form was created to document changes to the program that have been implemented as a direct result of the assessment process. The report of change form can be found at the end of this section of the report. The learning outcomes for the program are provided in the tables below labeled General Program Assessment Table, Including Department, College and University Goals.

d. Performance Criteria to Measure the Achievement of the Outcomes/Objectives;

The performance criteria to measure the achievement of the outcomes/objectives is found in the General Program Assessment Table found this section of the report.

e. Description of assessment tools and assessment findings are used to measure achievement of Construction Educational (Degree) Program Educational Objectives and Learning Outcomes.

The assessment tools and findings or forms are numerous. The most significant forms, as they relate to this report used for student achievement are included in the "Supporting Documentation" section of the report and are listed below:

- General Program Assessment Table
- Student Learning Outcomes Assessment Table
- Data Collection Spreadsheet for General Program Strategic Plan Assessment
- Data Collection Spreadsheet for Student Learning Outcomes
- Two Sample Grading Ruberics for items 1.A3 and 2.A1 from CMGT 445 – Heavy Civil Contract Law (used to collect data for student learning)
- Student Evaluation of instruction Form SEOI. Sample from CMGT 445 – Heavy Civil Contract Law
- Alumni Survey Results
- Continuous Quality Improvement Report with Assessment Data

In addition to the assessment forms, the following documents, including tabulated data, are used during the assessment process to report the achievements of construction program. These documents can be found in Volume II (Appendix) of this report:

- Assessment of Student Learning Report, Fall 2013
- Survey of Graduates Report, 2013 Graduating Seniors
- Focus Group Report (Memorandum) and Focus Group Data, Spring 2013
- AIC Exam Results 2013
- "Report of Change" Form
- Course Quality Improvement Plan
- 2014 CWU Construction Management Program Employer Survey

f. Description of each assessment tool and how the data collected is used to measure achievement of Construction Educational (Degree) Program Educational Objectives and Learning Outcomes.

The program assessment table defines the goals or the strategic plan of the program which identifies in a table format the construction program goals, related departmental goals, related college goals, related University goals, method of assessment, who/what was assessed, when the item was assessed and the criterion for achievement. Data is collected through a series of documents which include tabular data collected from each class to assess courses, through surveys of recent graduates, results from the AIC exam, student evaluation of instruction (SOEI) and through course quality improvement plans. The data is collected from several different professors and analyzed by the program coordinator.

Once all the data is collected it is incorporated into the Assessment of Student learning which is shared with the program faculty, college Dean, university Provost and President on a yearly basis. The data is measured against the outcomes for the program to determine the level of achievement within the goals for the program.

2. Provide a glossary of compatible terminology used in the Assessment Plan if the terminology varies from these standards due to institutional constraints.

Program Goals – a timeless strategic plan that guides the future of the program and allows the program to assess, implement and measure changes.

Report of Change- a form used for program assessment of the Construction Management program to identify a description of a concern, how the concern was identified, actions to be taken and a review method and timeline to address a concern.

C. Assessment Implementation Plan

1. Provide the construction educational (degree) program's schedule for planning and assessment.

For planning purposes the assessment goals and outcomes have been created as a timeless document. Below is a description of the program's schedule for when courses are assessed. Other assessment items, can be found in the latest assessment cycle found in at the end of this section. The summary of the Assessment of Student Learning is generated each year.

Twenty eight specific student learning outcomes have been divided into **three primary categories.** These three primary student learning outcomes and a summary of the corresponding assessment methods are as follows:

Outcome	
1. Cognitive/Knowledge/Knowing	**Assessment Method, When Assessed, Students Assessed**
A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.	Specific instruments in courses: CMGT 444, CMGT 445(fall quarter, seniors), 455 and CMGT 456. (winter, seniors).
B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Specific instrument in courses: CMGT 485 (spring, seniors), IET 312 (winter, spring, juniors), CMGT 265 (fall, winter, sophomores), CMGT 460, 461 (spring, seniors), CMGT 320 (spring, juniors and seniors), CMGT 442 (winter, juniors and seniors), CMGT 450 (fall, seniors), CMGT 455, 456 (winter, seniors) and SHM 323 (fall, juniors). Also: AIC Exam section scores and employer survey responses (not every year, senior students and graduates).
2. Affective/Attitudes/Feelings and Values	**Assessment Method**
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Ethics assignments in CMGT 265 (fall, sophomores), CMGT 444 and CMGT 445 (fall, seniors). Also specific assignment in CMGT 265 (fall, sophomores) and lab scores in CMGT 267 (spring, sophomores). Also, employer survey (not every year) graduating senior survey, exit interview (spring, seniors).
3. Skills/Doing	**Assessment Method**
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Estimating final project (spring, juniors), AIC exam section on scheduling (spring, seniors), CMGT 447 final project (fall, seniors). Also, employer survey (not every year).
B. Graduates shall be able to demonstrate basic building and material testing skills and the proper use of construction software.	CMGT 267 (spring, sophomores), CMGT 450 (fall, seniors), CMGT 460 and CMGT 461 lab scores (spring, seniors). Employer survey (not every year).
C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Presentations in various courses, IET 161 final project (winter, freshmen and sophomores), CMGT 265 sketching exercises (fall, sophomores), CMGT 346 and CMGT 347 research paper (winter, juniors) and AIC exam section on Communication Skills (spring 2013). Also, employer survey. (not every year).

2. Provide results of the latest assessment cycle which includes:
   a. A description of the data collected during the most recent assessment cycle;

A description of the data collected during the most recent assessment cycle in 2013 can be found in the supporting documentation section of this document. These assessment descriptions are provided to the University administration on a yearly basis. Below is a list of the data collected during the most recent assessment cycle:

- Student Learning Outcomes and Assessment
- Assessment Instrument Table (overall program and student learner outcome assessment)
- Narrative Report of Assessment of Student Learning Outcomes
- Senior Survey, Spring 2013
- On-Campus Recruiting
- Focus Group Report, Spring 2013
- AIC Exam Results, Spring 2013
- Student Learner Outcomes Data
- AIC Exam Results, Spring 2013
- Exit Interview Form, Spring 2013
- Senior Survey Data, Spring 2013
- Report of Change Forms

b. An evaluation of the Educational (degree) Program Objectives and Learning Outcomes assessment data compared to stated Performance Criteria;

An evaluation of the Educational Program Objectives and Learning outcomes assessment data compared to the stated Performance Criteria is stated in the Assessment of Student Learning for the 2012/2013 academic year at the end of this section.

c. Action plans for areas needing improvement;

Generally improvements and revisions to the program are handled through a report of change form. Since the last accreditation there have been several changes and improvements to the program. Once an item is noticed for improvement it is documented and then becomes part of an action plan to be completed and addressed. The documentation process includes a description of the concern, how the concern was identified, actions taken or to be taken and a review method and timeline.

Since the last accreditation cycle there have been several improvements and action plans created for the program. A short titled summary is provided below and a more detailed description of “Report of Change” can be found in the appendix of this section.

- Resignation of a CMGT professor
- Ethical issues regarding students in the CMGT program
- Incorporation of blueprint reading software into the curriculum
- Fund raising implementation plan
- Size of CMGT 245 class affecting student learning experience
- Course sequence for CMGT 320
- Phased retirement of CMGT faculty
- Evaluation of projects for CMGT 245
- Department name change to Engineering Technologies, Safety and Construction
- Use of P6 in place of Microsoft Project
- Opportunity to invite guest speaker to CMGT 460 on the subject of managing a large concrete construction project
- SHM 323 Construction Safety class concerns

- Workload on faculty due to high advising loads
- Industry Advisory Council attendance
- Opportunity to increase diversity of students within the CMGT program
- Incorporation of Building Information Modeling (BIM) into CMGT curriculum
- Incorporation of construction ethics in CMGT courses within the learner outcomes
- Vague description of CMGT 452 elective within the course catalog
- Incorporation of Detail of Work Experience Detail form in application process

d. Results of implementation for improvement including any revisions to the educational (degree) program's assessment plan along with any reassessments and action plans.

There have been many changes to the program's assessment plan that have stemmed from the report of changes form. Short summaries are listed above on the improvements to the plan. Once changes have been identified there has been steady improvements to the assessment plan.

Since the program has implemented the Report of Change process, changes to the program have been implemented to improve the quality of the program. For instance, the program implemented a work experience detail form into the application for major process. These detail forms allow the faculty to evaluate an applicant's work experience in a more formal manner where before the evaluator had to rely on the student resume, which could be vague. This allowed all the evaluators of the application to provide a more consistent scoring process for the applicant's experience.

The CMGT 452 Sustainable Construction course listing in the University catalog was vague in what was required to register for the course and have the course count as college credit with the CMGT curriculum. If students completed this course the University system would not count this course for CMGT credit. To accept the course in the University system, students would have to complete a substitution form to substitute the course for CMGT 245 Light Commercial Construction or IET 490 Cooperative Work Experience. Since the problem was identified the program had the language changed within the University requirements to allow students to take CMGT 245 Light Commercial Construction or CMGT 452 Sustainable Construction or IET 490 Cooperative Work Experience. This change eliminated the creation of an additional form to get credit for CMGT 452.

Many of the CMGT course syllabi did not have ethics identified incorporated in the learner outcomes where required within the CMGT curriculum. Now all course syllabi have ethics specified within the learner outcomes and ethics is measured and assessed across several courses within the program curriculum.

The program did identify the use Building Information Modeling (BIM) was increasing in use throughout the industry. The program at the time only mentioned BIM in courses in a small presentation to students. The results of identifying this as an item of concern have lead the program to include BIM in the IET 161 class and provide a hands on application to BIM in the course. To facilitate this, REVIT software was added as part of the software list on all computers in the labs. BIM is also incorporated in our CMGT 485, Construction Accounting and Contemporary Topics course as an overview with guest speakers from industry to discuss its use.

In an effort to increase student diversity within the program, the program brought this issue to the industry advisory board. The industry advisory board voted to create a new Construction Management Scholarship to award a $3,000 scholarship to students entering the program giving preference to women/minority students. Since the development of this scholarship $14,000 has been awarded to students and $8,000 has been awarded to women or a minority entering into the program.

In 2009 the ACCE team mentioned there was a lack of industry participation in their report that there as a lack of attendance to the Advisory Council meetings. The program addressed this concern through a reorganization and revitalization of the Industry Advisory Council. In the Fall of 2009 bylaws were adopted and over the recent years participation has increased. Also, newer members have assumed positions on the council and committees have been formed. There are four committees and a chair for each committee which include Membership, Events/Outreach, Curriculum Review and Scholarship.

To maintain the quality within the program, students are advised each quarter by a faculty member. This created a significant workload for each faculty member and was not accounted for within the workload plan for faculty. A result

of identifying this issue is that each faculty member receives 1 to 2 workload units for the increased workload of advising.

In 2012 it was identified that the SHM 323 Construction Safety Class was not performing to the standards of the program as identified by low student results on the American Institute for Constructors (AIC) exam and poor comments from students about the class. Since, 2011 the Safety and Health Management program hired a new tenure track faculty member to manage this program. The SHM 323 class was revamped and a lab was created to increase the quality of learning in construction safety. Since these changes have been implemented in the curriculum the program has seen a increase in the scores on AIC exam section for Safety.

Through the review of the course CMGT 460 Concrete Construction course, a member of the Advisory Council suggested bringing in a guest speaker to discuss the subject of the management of a large concrete construction project. The instructor contacted an industry member and CMGT Alumni, Amy Jenne of Apollo, Inc. to provide a presentation on the topic of managing large concrete construction projects. Within her presentation she provided lots of examples of concrete construction projects and included special topic like selection of forms and placing concrete. This improvement increased the students awareness of the complexities of planning a concrete construction project.

For many years within our CMGT 447 Construction Scheduling class MS Project was used as the software to teach students scheduling. There was an issue that MS Project was not used heavily within industry and the industry was moving away from Microsoft Project and primarily uses Primavera's P6 as their scheduling software. This issue was identified by the Industry Advisory Council, student responses to course reviews and informal feedback from alumni and industry representatives. The program also conducted a survey through the Industry Advisory Board to determine the use of P6 vs. Microsoft Project. To improve the quality of the course, P6 was implemented as the scheduling software for the course. Exposure to this software has provided students the opportunity to become leaders in the area of scheduling within their respective companies.

In 2011 the University completed construction of the new Hogue Hall. In 2009, the ACCE team identified an undeveloped potential within the visiting team report that the department name did not reflect the true nature of the programs in the department and the name of the department did not contain information about the largest program in the department, Construction Management. Since then, the name of the department has been changed to the Department of Engineering Technologies, Safety and Construction. The new department name has increased the programs visibility on campus and makes it easier to search for the program through electronic media.

Within CMGT 245 Light Commercial class, the program made improvements to how projects were selected for the class. A project selection matrix was created by identifying this it has improved the types of projects the class undertakes in terms of complexity and providing a diversity of experience within the class to expose students to increase the learning opportunities within the class.

Two members of the CMGT faculty have decided to go on a phased retirement. With this phased retirement the two professors would be put on half time workloads creating a position on the Construction Management program's faculty line. The program then hired another faculty member to teach the General Construction category of the curriculum. Although this was not a concern, it was important to keep a consistent number of faculty to teach the program's curriculum. And in the Fall 2012 Dave Carns would teach courses in the Fall and Winter quarters and Bill Bender Would teach courses in the Winter and Spring quarters

Through assessing the curriculum it was identified that the CMGT 320 Electrical Systems Design did not align with the proper flow of classes within the curriculum. This also created problems with conflicts in student schedules. To provide a better flow of coursework for students the program moved the class from being offered in the Spring quarter to having it offered in the Winter quarter. This allowed students to complete the class sooner and balanced the coursework for the student in their Senior year.

In the program's CMGT 245 Light Commercial Construction class an issue was identified that the class was too large and difficult to manage and was unable to obtain two projects on to facilitate the class. The program has since then created other opportunities to get hands on experience in construction by allowing students the option of taking one of three courses in the curriculum which include CMGT 245 Light Commercial Construction, CMGT 452 Sustainable Construction or IET 490 Cooperative Field Experience. By implementing this change into the curriculum the enrollment has dropped in CMGT 245 and the class is much more manageable.

The program has also seen a change within industry moving away from printed contract documents, such as blueprints and moving toward electronic plans/documents. This was identified by faculty and comments from students. The

program has installed Bluebeam as part of its software offered in the computer labs. In addition to the availability of the software, Bluebeam will be introduced in CMGT 265 Blueprint Reading and reinforced later in CMGT 343 Construction Estimating.

Other changes that have currently been implemented in the Fall of 2014 include the identification and implementation of a fund raising plan for the program. A draft of the fund raising plan can be found within the appendix of this document under a Report of Change. The intent of the plan is to provide goals for the program in the development of funds to support the program and students.

The program is also in the process of establishing an ethical code of conduct for both students and faculty. This has been an ongoing concern identified by faculty and students within the program. The main issues are centered around students within the program copying homework and being disrespectful to faculty with the use of cell phones and other electronics during class. The code of conduct to address these issues will be implemented in the Winter of 2015.

Recently, one faculty member assumed a new position with another University. This has left the program with a vacancy to cover several courses within the curriculum. Starting in the Fall of 2014 a search committee has been assembled to acquire a new professor to fill the vacancy. The Provost has also agreed to allow the new faculty member to teach in Construction Management and assume the Chair position for the department. The vacancy should be filled by Fall of 2015

General Program Assessment Table, Including Department, College and University Goals:

Construction Management Program Goals	Related Department Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who/What Assessed	When Assessed (term, dates)	Criterion of Achievement
Goal A. Improve the quality of instruction in the program.							
1. Students shall demonstrate the knowledge, skills, and attitudes to be successful in their field.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.	Student Learning Outcome Plan (separate document)	Freshman, Sophomores, Juniors and Seniors in the CMGT major and pre-major	Continuous, fall, winter and spring	All student learner outcomes that use direct measures meet established criterion levels. See the complete Student Learner Outcome Plan.
2. Continue to revise existing courses on a three-year cycle, based partially on industry review and recommendations.	2. Strengthen the preparedness of freshman and transfer students.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.	Yes or no, are courses reviewed?	Courses	Annually	Review by Advisory Council, yes or no. Reviews are placed in the Individual Course Assessment notebook.

3. Maintain small class size with an average enrollment of 25 students and a maximum enrollment of 35 to 40 students in the CMGT courses.				Yes or no; is the goal achieved?	Courses, program	Annually	Data is collected and analyzed in a spreadsheet. New sections of courses are added if needed.
4. Add a permanent course, as an option, on LEED and sustainable building by winter 2008.				Yes or no; is the goal achieved?	Courses	Annually	Yes or no, enrollment is tabulated by quarter.
Construction Management Program Goals	**Related Department Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who/What Assessed**	**When Assessed (term, dates)**	**Criterion of Achievement**
Goal B. Provide support for the construction industry.							
1. Present two programs or seminars per year for the architectural/engineering/ construction industry or assist with two workshops or short courses in conjunction with established industry organizations such as AGC/ASCE/AACE.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation.	Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.	Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs. Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses. Goal V: Achieve regional and national prominence for the university.	Yes or no; is the goal achieved?	Seminars, faculty	Annually	Seminars or programs are documented in a table. Goal is two seminars per year.
2. Place a minimum of 90% of graduates in responsible positions in the construction industry.				Graduating senior written survey.	Senior students	Spring quarter	Exit survey data (graduating seniors, each year). The placement rate, job titles and average starting salaries are tabulated. The goal for graduating seniors is a 90% placement rate.
3. Bring a minimum of 40 employers on campus to interview students for jobs each year.				Career Services records	Employers	Fall quarter	A data table with a list of construction-related employers visiting campus is evaluated. The goal is 40 or more attendees.
Goal C. Measurably improve the overall quality of the construction program.							

1. Improve the overall level of general construction knowledge of seniors in the program with a minimum of 70% of the seniors passing the AIC Level I exam and a minimum average score for all seniors of 70%.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation. 2. Strengthen the preparedness of freshman and transfer students. 4. Continuously improve physical educational environment.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses. Goal V: Achieve regional and national prominence for the university.	AIC national exam	Senior Students	Spring quarter	All seniors are required to take the exam and the results are returned to the program by AIC. The results are then tabulated and analyzed, including the percent of CWU students passing and the overall score, in percent.
Construction Management Program Goals	**Related Department Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who/What Assessed**	**When Assessed (term, dates)**	**Criterion of Achievement**
2. Continue efforts underway by the Construction Management Advisory Council. These efforts include: • Fund-raising with the ultimate goal of creating a Council budget that is self-sustaining.				The CMGT Advisory Council treasury reports	Industry and faculty	Fall quarter	The goal is to raise $5000 per year.
• Sponsoring annual alumni/contractor events.				Advisory Council records	Industry and faculty	Annually	Yes or no. This includes the golf tournament and events such as the cocktail hour or other alumni events. Attendance and dates are tabulated.

• Conduct two meetings per year to provide advice on curriculum, program needs, etc.				Advisory Council meeting minutes	Industry and faculty	Annually	Minutes of each meeting are recorded, sent to council members and keep in a notebook. Goal is a minimum of two meetings per year.
• Publish two or three "Building Times" newsletters per year.				Records of publication	Faculty, program	Annually	Each copy of the “Building Times” newsletter is kept on file. Goal is a minimum of two per year.
• Continue industry and university relations efforts for the program.				Record of participation	Faculty and industry	Ongoing	Attendance at AGC and AGC Education Foundation Board meetings by faculty members is documented. Goal is ongoing involvement.
Construction Management Program Goals	**Related Department Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who/What Assessed**	**When Assessed (term, dates)**	**Criterion of Achievement**
3. Provide at least one community service project each year through Sigma Lambda Chi, the AGC Student Chapter, MCA Student Chapter or the NAHB Student				Record of community service projects	Sophomore, Junior and Senior students. Faculty advisors	At the end of spring quarter each year	Projects are documented, yes or no. Goal is a minimum of one project per year.
4. Compete in the Associated Schools of Construction Region VII competition each year. The objective is to place in all categories in which Central competes (commercial, residential, LEED and heavy/civil) each year.				ASC records of participation	Junior and seniors students, faculty coaches and industry mentors	Annually, February	Yes or no. Goal is to compete in four categories.

4. **Goal D. Support professional development for program faculty**							
1. Send each faculty member to a minimum of one professional conference per year.	5. Continuously improve the cultural educational environment.	Goal 3 - Recruit and retain a diverse and highly qualified faculty to develop and sustain prominent programs. Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.	Goal VI: Build inclusive and diverse campus communities that promote intellectual inquiry and encourage civility, mutual respect, and cooperation. Goal V: Achieve regional and national prominence for the university.	Records of attendance	Faculty	Annually	Attendance is documented and tabulated. Goal is a minimum of one conference per year per faculty member.
2. Have each faculty member write and publish a minimum of one paper or article per year or write and submit a grant application relative to his/her area of expertise.				Publication records	Faculty	Annually	Papers and grants, written and published, are documented and tabulated. Goal is a minimum of one paper/article per academic year.
Construction Management Program Goals	**Related Department Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who/What Assessed**	**When Assessed (term, dates)**	**Criterion of Achievement**
3. Continue a faculty internship program where each faculty member can intern with or visit a contractor at their home office or a project site on an annual basis.				Record of participation	Faculty	Annually	Involvement in industry is documented and tabulated. Goal is ongoing involvement.
5. **Goal E. Improve the newly established heavy/civil option within the program.**							

1. Utilize the earnings from the endowed sum of $500,000 ($250,000 from private industry and a $250,000 match from the state) to hire adjunct help or a part-time tenure-track faculty member to assist with the heavy/civil option.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation. 2. Strengthen the preparedness of freshman and transfer students. 4. Continuously improve physical educational environment.	Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses. Goal V: Achieve regional and national prominence for the university.	Foundation account records	Foundation/faculty/industry	Spring 2008	Document earnings and how the earnings are utilized to improve the heavy/civil option.
2. With assistance from the Advisory Council, offer the new course, CMGT 443, Utility Construction, by spring quarter 2009.				Industry review of course	Course/faculty/industry	Spring 2008	Yes or no.
3. Develop a highway materials/asphalt lab, in conjunction with CMGT 461, the highway materials and design course, by spring quarter 2009.				Industry review of lab exercises	Course/faculty/industry	Spring 2008	Yes or no. Lab exercises will be documented in the syllabus for the course.

Student Learning Outcomes Assessment Table:

Student Learning Outcomes (performance, knowledge, attitudes)	Related Program Goals	Related Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)
1. Cognitive/Knowledge/Knowing								
A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. The student shall be able to identify and explain construction contracts and the roles and responsibilities of all parties involved with 80% accuracy.					CMGT 444 and CMGT 445 Exam	Seniors	Fall	80%
2. The student shall demonstrate knowledge of lien laws, local and national labor laws and the contractors' and owners' rights pertaining to these areas with 80% accuracy.					CMGT 444 and CMGT 445 Final Exam	Seniors	Fall	80%
3. The student shall be able to explain various construction dispute resolution techniques and various steps that may be taken to avoid disputes with 80% accuracy.					CMGT 444/445 Exams	Seniors	Fall	80%
4. Students shall be able to describe basic management principles, organizational behavior and structure as these related to the construction industry with 80% accuracy.					CMGT 455/456 Quizzes or Assignments	Seniors	Spring	80%

B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
Student Learning Outcomes (performance, knowledge, attitudes)	**Related Program Goals**	**Related Departmental Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who Assessed**	**When Assessed**	**Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)**
1. Students shall demonstrate an understanding of managerial accounting techniques as they relate to the construction industry with 80% accuracy.					CMGT 485 Exam or Assignment	Seniors	Spring	80%
2. Students shall demonstrate an understanding of mathematics and science; including chemistry, physics and mathematics through calculus with 80% accuracy.					IET 312 exam question on shear and moment diagrams	Juniors	Winter or Spring	80%
3. The student shall demonstrate knowledge of types and uses of construction materials, including wood, steel and concrete. This knowledge shall include understanding terminology, units of measure, sizes and gradations, standard designations, specifications and testing techniques, with 75% accuracy.					CMGT 265 Exam questions CMGT 460/461, average of exam 1	Sophomores Seniors	Fall or Winter Spring	75% 75%
4. Students shall demonstrate knowledge in the areas of structural mechanics, including statics and strength of materials with 80% accuracy.					IET 311 Exam, Find reactions for a beam	Juniors	Fall or Winter	80%
5. Students shall demonstrate an understanding of, electrical and mechanical systems with 80% accuracy.					CMGT 320, Assignment to calculate the	Juniors/seniors	Winter	80%

					electrical load for a house CMGT 442, Assignment to calculate the heat load for a building	Juniors/Seniors	Spring	80%
6. Students shall demonstrate knowledge of soil mechanics and foundation types and principles of design with 80% accuracy.					CMGT 450, Assignment to calculate the bearing capacity of a shallow foundation	Seniors	Fall	80%
7. Students shall demonstrate a working knowledge of construction cost accounting, financing, insurance, bonding, bidding and procurement practices, depreciation and expensing, cost forecasting, cash flow requirements, time value of money and project payment procedures, with 70% accuracy.					AIC Exam section; Budgeting, Costs and Cost Control, overall scores of CMGT seniors	Seniors	Spring	70%
8. The student shall demonstrate knowledge of construction safety training, procedures, record keeping, maintenance, inspection, penalties and compliance with state and federal regulations with 70% accuracy.					AIC Exam section; Construction Safety, overall scores of CMGT seniors SHM 323 Final exam, average scores	Seniors Juniors	Spring Fall	70% 70%
Student Learning Outcomes (performance, knowledge, attitudes)	**Related Program Goals**	**Related Departmental Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who Assessed**	**When Assessed**	**Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)**
9. Students shall demonstrate an understanding of construction project management; including concepts, roles and responsibilities of individuals, administrative systems and procedures, cost control systems, proper job site and office documentation and quality control philosophies and applications with 70% accuracy					AIC Exam section; Management Concepts, overall scores of CMGT seniors	Seniors	Spring	70%
10. Students shall be able to demonstrate knowledge of site mobilization and short term project planning,								

including staffing, material requirements and equipment selection and utilization with 80% accuracy.					CMGT 455/456 Project	Seniors	Spring	80%
2.Affective/Attitudes/Feelings/Values								
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. Students shall be able to identify and understand ethical issues relevant to the various parties in the construction process, and to react in a manner consistent with ethical standards established by the construction industry associations, with 80% accuracy.					Average scores of CMGT 265 ethics assignments Average score of CMGT 444/445 ethics assignment	Sophomores Seniors	Fall or Winter Fall	80% 80%
2. Students shall demonstrate the ability to work in groups and act as team players, with a success rate of 80%.					Average scores on CMGT 267 final project	Sophomores	Spring	80%
3. The student shall demonstrate knowledge of construction industry organizations, such as; The Associated General Contractors of America (AGC), The National Association of Home Builders (NAHB), The Mechanical Contractors Association (MCA), The American Council for Construction Education and The American Institute of Constructors. Students shall also demonstrate knowledge of the commitment and importance of these organizations to society, with 80% accuracy.					CMGT 265 Assignment or exam	Sophomores	Fall/Winter	80%

Student Learning Outcomes (performance, knowledge, attitudes)	Related Program Goals	Related Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)
3. Skills/Doing								
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. Students shall be able to perform accurate detailed quantity takeoffs on a commercial/residential project, including all Construction Specification Institute (CSI) divisions, both manually and utilizing Microsoft Excel, with a success rate of 90%.					CMGT 343 Final project scores	Juniors	Winter	90%
2. Students shall be able to accurately prepare a bid, based on pricing of materials, labor, equipment, overhead and profit for a commercial/residential or heavy/civil project. In addition, students choosing the general construction option shall be able to utilize estimating software, such as Timberline, to create and submit a bid for a residential/commercial project. Students choosing the heavy/civil construction option shall be able to estimate and bid a heavy/civil project using appropriate software, with an accuracy rate of 90%.					CMGT 344/345 Final Project	Juniors	Spring	90%

3. Students shall be able to prepare, analyze and update both a Gantt chart and a network (critical path method) schedule for a commercial/residential or heavy/civil project, both manually and utilizing scheduling software (Microsoft Project, SureTrak or similar scheduling software), with a success rate of 70%.					AIC Exam section; Planning, Scheduling and Control, overall score of CMGT seniors CMGT 447 Final project average score	Seniors Seniors	Spring Fall	70% 70%
Student Learning Outcomes (performance, knowledge, attitudes)	**Related Program Goals**	**Related Departmental Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who Assessed**	**When Assessed**	**Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)**
B. Graduates shall be able to demonstrate basic building and material testing skills.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. Students shall demonstrate the ability to perform basic field and lab tests on construction materials, including concrete, and soils with 80% accuracy.					CMGT 450, Overall average lab scores CMGT 460/461, Slump and cylinder tests, overall average lab report scores	Seniors Seniors	Fall Spring	80% 80%
2. Students shall demonstrate the ability to properly use and care for construction surveying instruments,								

including levels, transits, theodolites, tapes and electronic distance measuring devices, as these instruments relate to construction projects, with 80% accuracy.					CMGT 267 Lab, overall average lab scores	Sophomores	Spring	80%
Student Learning Outcomes (performance, knowledge, attitudes)	**Related Program Goals**	**Related Departmental Goals**	**Related College Goals**	**Related University Goals**	**Method(s) of Assessment**	**Who Assessed**	**When Assessed**	**Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)**
C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. Students shall be able to effectively prepare and present a technical oral report on various construction topics, with 80% success					CMGT 346/347 Student presentation average scores	Juniors	Winter	80%
2. Students demonstrate the ability to make business and professional oral presentations, with 80% success.					CMGT 485 Student presentation average scores	Seniors	Spring	80%
3. Students shall demonstrate the ability to prepare and edit a complete set of working drawings for both a residential or commercial building using AutoCAD software, with 80% accuracy.					IET 161 Final project average score	Freshmen/Sophomores Juniors/Seniors	Fall/Winter/Spring	80%
4. Students shall be able to communicate graphically using standard sketching and engineering drawing techniques, including proper dimensioning, orthographic projections, sections, auxiliary views and detail views, with 80% accuracy.					CMGT 265 Sketching and drawing assignments, average scores	Sophomores	Fall/Winter	80%

5. Students shall be able to properly research a topic, using the reference materials at the library, the Internet and industry resources to prepare written technical reports, with 80% accuracy.					CMGT 346/347 Research paper average score	Juniors	Winter	80%
6. Students shall be able to clearly demonstrate their written communication skills by writing prose, business letters, resumes, and daily job reports that include proper grammar, spelling and sentence structure, with a 70% success rate.					AIC Exam section; Communication Skills on written skills, overall score of CMGT seniors	Seniors	Spring	70%

Construction Management Program Assessment of Student Learning
Fall 2013

Central Washington University
Assessment of Student Learning
Construction Management Program
Engineering Technologies, Safety and Construction Department
College of Education and Professional Studies
Fall 2013

Introduction: This report is an overview of the student learning outcome assessment process. Included are the instruments utilized, data collected and the resulting changes that took place during the time period from June 2012 to June 2013. Discussion of the significance of the results is also included.

Contents:

1. Program Mission and Goals

The primary mission for the Construction Management Program is to provide the highest possible quality general construction education to undergraduate students who are preparing for careers in the construction industry.

The secondary mission is to maintain ongoing contact with the construction industry and to provide support for this industry.

The Major Program Goals Are:

- Goal A: Improve the quality of instruction within the program
- Goal B: Provide support for the construction industry
- Goal C: Measurably improve the overall quality of the construction program
- Goal D: Support professional development for program faculty
- Goal E: Improve and expand the heavy/civil construction option within the program

2. Student Learning Outcomes and Assessment

Twenty eight specific student learning outcomes have been divided into **three primary categories.** These three primary student learning outcomes and a summary of the corresponding assessment methods are as follows:

Outcome	
1. Cognitive/Knowledge/Knowing	**Assessment Method, When Assessed, Students Assessed**
A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.	Specific instruments in courses: CMGT 444, CMGT 445(fall quarter, seniors), 455 and CMGT 456. (winter, seniors).
B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Specific instrument in courses: CMGT 485 (spring, seniors), IET 312 (winter, spring, juniors), CMGT 265 (fall, winter, sophomores), CMGT 460, 461 (spring, seniors), CMGT 320 (spring, juniors and seniors), CMGT 442 (winter, juniors and seniors), CMGT 450 (fall, seniors), CMGT 455, 456 (winter, seniors) and SHM 323 (fall, juniors). Also: AIC Exam section scores and employer survey responses (not every year, senior students and graduates).

2. Affective/Attitudes/Feelings and Values	Assessment Method
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Ethics assignments in CMGT 265 (fall, sophomores), CMGT 444 and CMGT 445 (fall, seniors). Also specific assignment in CMGT 265 (fall, sophomores) and lab scores in CMGT 267 (spring, sophomores). Also, employer survey (not every year) graduating senior survey, exit interview (spring, seniors).
3. Skills/Doing	**Assessment Method**
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Estimating final project (spring, juniors), AIC exam section on scheduling (spring, seniors), CMGT 447 final project (fall, seniors). Also, employer survey (not every year).
B. Graduates shall be able to demonstrate basic building and material testing skills and the proper use of construction software.	CMGT 267 (spring, sophomores), CMGT 450 (fall, seniors), CMGT 460 and CMGT 461 lab scores (spring, seniors). Employer survey (not every year).
C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Presentations in various courses, IET 161 final project (winter, freshmen and sophomores), CMGT 265 sketching exercises (fall, sophomores), CMGT 346 and CMGT 347 research paper (winter, juniors) and AIC exam section on Communication Skills (spring 2013). Also, employer survey. (not every year).

Complete details of all the student learning outcomes, corresponding program, department, college and university goals are available in the appendix of this report (Section 5A).

3. Assessment Instrument Table

In addition to assessment data collected in specific courses, the CMGT program uses other assessment instruments. The following table summarizes the instruments that are utilized to collect data, evaluate student learning outcomes and make changes to the construction management program. The instruments utilized to assess student learner outcomes are shown in bold italics in the table.

Instrument	Description	Where Implemented	Schedule	Feedback	Implementation of Change (Adjustment)
Student Evaluation of Instruction Forms (SEOI)	Standardized evaluations pertaining to course and instructor	Completed by each student in each course in the program	Every quarter, usually in the last week	Summary and individual comments supplied to instructor, ETSC Chair and Dean within three weeks	Faculty member adjusts course delivery/content. ETSC Chair, Personnel Committee and the Dean of CEPS may make suggestions
Continuous Quality Improvement (CQI)	Instructor self-evaluation pertaining to each course	Completed by each instructor at the conclusion of each course	Every quarter	Instructor implements changes	Faculty member adjusts course deliver/content
Exit Questionnaire	Written document completed by graduating seniors in June. Pertains to education and pending employment.	400 level course in the major	Administered each May or June by the ETSC Chair or CEPS Associate Dean	Results are summarized and discussed among the faculty and Chair	Faculty/program director implement changes for the upcoming academic year
Focus Group	Chair or Associate Dean conducts a focus group survey with all the graduating seniors, designed to identify program strengths and weaknesses	400 level course in the major	Administered each May or June	Chair or Associate Dean prepares short written report, results are discussed with program director	Faculty/program director implement changes for the upcoming academic year

Alumni Survey	Written survey pertaining to placement, duties, salary, job satisfaction and education at CWU is mailed to all alumni on record that graduated within the past five years		Five-year cycle	Detailed report is prepared	Information is shared with the Executive Members of the Advisory Council (re: job placement and salaries) and with program faculty. Helps to identify direction and satisfaction of program and areas that may need improvement
American Institute of Constructors CPC Level I Exam	National Exam designed for seniors/professionals	Required of all seniors as part of CMGT 488, Professional Certification	Administered every March or April	Summary report is prepared and submitted to the program coordinator each April or May	Results provide comparison with the national averages. These results are arranged by subject, allowing identification of relative strengths and weaknesses
Report of Change Form	Documentation of changes	At all levels	Continuous	Program faculty	Reporting mechanism

4. Narrative Report of Assessment of Student Learning Outcomes

Graduates of the CMGT program are very well received by industry, as indicated by the following measures:

A. Senior Surveys

On Tuesday, May 21, 2013 an exit questionnaire survey was distributed to seniors in the Construction Management program where 23 surveys were returned.

Employment: In June 2013: Of the 23 seniors, 22 indicated that they were graduating in June and of those 23, 19 (82%) had accepted full-time employment in the construction industry at the time of the survey. The average starting salary was $54,806. This salary was slightly lower than previous years.

Satisfaction: In addition the seniors were asked to rate their satisfaction pertaining to 14 aspects of their construction management education. A scale of 1 to 5 was used with 1 being "strongly disagree" and 5 being "strongly agree".

Most of the 14 areas received very favorable feedback with a rating of 4.0 or higher. An area that has, for several years, been a consistent issue with the program was safety. Last year in 2012 safety was rated at a 2.9, this year (2013) it was the only rating that fell below a 4.0 with an increase to 3.7. A very good reason why there has been an increase in this rating is through the efforts of a new safety professional teaching the course who has brought the

course back to a more hands-on mode of delivery where students can relate to the material. This change in instructors has been a beneficial change to the program and should show an increase in the future with a state of the art safety lab, which will include several hands-on safety trainers incorporated into the lab. It should also be noted that the Safety program at the end of this year hired a new safety professor to start in the Fall of 2013. This will increase the number of professors in the safety program to two.

The 2012 to 2013 seniors rated the highest curriculum area of satisfaction in "Methods and Plan Reading" with a rating of 4.57. Other areas of strength in the program included "Engineering Concepts" and "Bidding and Estimating" both with ratings of 4.39. Interestingly, "Oral Communication" was also rated as an area of strength with a rating of 4.35. Finally, the "Competitiveness with other Programs" was the highest rated item with a rating of 4.65 which was slightly higher than 2012.

These survey results support student learner outcomes (or at least the senior students' perception of knowledge gained) in two of the three categories:

1. Cognitive/Knowledge/Knowing

B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.

Item from survey	2013 Rating from survey
Engineering concepts	4.39
Construction methods and plan reading	4.57
Management concepts	4.35
Budgeting and cost control	4.13
Construction safety	3.70

3. Skills/Doing

A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.

Item from survey	2013 Rating from survey
Bidding and estimating	4.39
Scheduling	4.22

B. Graduates shall be able to demonstrate basic building and material testing skills.

Item from survey	2013 Rating from survey
Surveying	4.17

C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.

Item from survey	2013 Rating from survey
Written communication	4.13
Oral communication	4.35

Students felt very satisfied with their written communication skills which increased from 2012 at 3.8 where oral communication dropped slightly in 2013 to 4.35 from 2012 at 4.5. It seems that the faculty have made a consistent effort to increase students written communication assignments into the CMGT since the students' satisfaction with written communication has increased above 4.0.

Employment Information:

Starting Salary 2013	$54,806			
Employment (Type of firm)	General contractor 78%	Specialty contractor 4%	Owner 0%	
Type of Work	Commercial 30%	Heavy/Civil (includes marine) 43%	Residential 4%	Other (Mechanical/Industrial) 4%

With an 83% placement rating there were a slightly higher number of graduates who had accepted positions with heavy/civil employers than commercial contractors. It is interesting that there were graduates who did accept positions with residential and utility contractors. Our data does seem to align with how the economy is on a slight comeback from previous years even though the average salaries has dropped slightly from previous years.

Other summary employment data is included below and the complete data from the survey is included in Appendix D.

B. On-Campus Recruiting

Again this year from June 2012 to June 2013, well over 50 companies have visited campus to recruit CMGT students for internships and permanent positions. Many of the visits were in conjunction with the November 2012 ETSC Career Fair (43 companies in attendance) in the Sub-Rec ballroom and a number of companies visited in the fall and winter quarters in Hogue Hall. For the most part, in the month of October every Monday through Wednesday evening was booked with a company visiting campus recruiting students for internships and final placement. All aspects of construction (residential, commercial, heavy/civil, marine and mechanical) were represented. Many of the companies stated that they have seen an increase in their backlogs which was the driving need to increase their hiring practices.

C. Focus Group Report

Students are generally satisfied with their learning and educational experience.

On May 22, 2013 Dr. Connie Lambert, Dean of College of Education and Professional Studies, held an informal focus group interview with 23 graduating seniors in Hogue room 227. Her findings are included in the form of a short report below.

May 22, 2013

To: Warren Plugge, Program Coordinator, Construction Management
From: Connie Lambert, Dean, College of Education and Professional Studies Re: Construction Management Senior Exit Interview

Date: Tuesday, May 21, 11:00-11:30 AM

Location: Hogue 227

Purpose: Construction Management Senior Exit Interview

I met with the senior Construction Management students and listened to their responses to three questions: strengths of the program, needs of the program and suggested improvements. The following is what was shared with me.

Strengths:
- Professor Carns
- Small class sizes
- Attending the Reno competition
- Meeting company representatives and having them recruit on campus
- Internships that allow for application of skills
- Embracing technology that is somewhat current

Needs:
- More than one professor with industry knowledge
- A class on Building Information Modeling (BIM)
- Keep the building and computer labs open later
- Estimating class that involves teams and a competition making it more like Reno
- More lab space

Suggested Improvements:
- Professor Martin is doing well except he docks points for format, which is "extreme"
- Professor Whelan seems to be teaching without understanding the content
- Professor Plugge gets angry when questioned and doesn't provide correct responses; he also changes the calendar to "crunch" exams toward the end of the quarter without returning assignments that can be used for studying
- More internships – make external industry internships mandatory vs. voluntary

- Allow an audit of some of the Heavy Civil courses – students said that they gained most of the information prior to taking the courses and felt some of the information was redundant. Also that it was frustrating when they thought they knew more about the content than the professor. They suggested that a professional audit be allowed for 1) Utilities, 2) Estimating, 3) Temporary structures, and 4) Asphalt. They said that all four courses seemed to be based more teacher opinion without textbooks vs. actual information.
- Bring in more guest speakers from industry
- Provide seminars to "fill the gap" between courses (book knowledge) and industry realities
- Provide more field trips to job sites
- Narrow the course content in CMGT 320: Electrical Systems Design to usable information, such as utilities and underground
- Associate Constructor Exam – offer it as a 3hour/week option at the 400 level; take it in the fall vs. winter
- Provide more information on risk management
- Add "following the money flow" to the project management class

Recommendations:

- Since Professor Carns is perceived as a strength of the program, have him mentor Professors Whelan, Plugge, and Martin to ensure program delivery is consistent and cohesive.
- Review CMGT 320 content to ensure all information provided is critical
- Review internship requirements concerning whether having mandatory internships will benefit students and the program. Students stated that they were very valuable experiences in which they applied content knowledge to the "real world."
- In collaboration with industry professionals, review Heavy Civil course content to reduce redundancy while, at the same time, ensuring accreditation standards are met.

Conclusion: Students were unanimous that they "learned a lot" and that "the program is good." Others wanted me to know that the "commercial program is awesome."

Thank-you for the opportunity to visit with this group of seniors – I enjoyed my time with them.

Results and Changes: The students had many relevant comments and some good ideas and some have been implemented at the time of this report. For example, a licensed for Primavera P6 has been purchased and the software is being used fall quarter 2012 in CMGT 447, Construction Scheduling. The safety class, SHM 323, Construction Safety, has a new instructor and is being revamped to include many relevant hands-on labs such as: Confined Space Training, Lockout Tagout procedures, Fall Protection, Ladder Safety, Scissor Lift Safety, etc. The student comments about the computer lab were legitimate. This has been addressed with the completion of the new addition and renovation of the existing Hogue building, where two computer labs and a color printer are available.

D. AIC Exam

The American Institute of constructors (AIC) exam scores indicate extremely strong performance for students from the Construction Management Program at Central Washington University. Numerical results are utilized to provide data to evaluate student learner outcomes.

The AIC exam is required of all CMGT seniors in the spring of their year of graduation. This is a national, eight-hour comprehensive exam that tests and identifies ten areas of competency. In April 2011, 36 CMGT seniors took the exam and in and March 2012, 32 CMGT seniors took the exam.

In 2013 the average score for 26 Central students was 220.77/300 (74%), while the national average was 208.93/300 (70%). One thousand thirteen (1013) students took the exam nationwide. Results for 2013 are summarized below:

- 16 of the 26 (62%) students from CWU who took the exam passed. This was well below the 2012 pass rate of 91% and slightly lower than the 2011 pass rate of 67%.
- 537 of the 1013 (53%) students nationally passed.
- The average score from CWU was 74% slightly lower than 2012 average of 76% and 2011 average of 75%.
- It is noteworthy that three students scored above the 90th percentile and one of those students was an international student.
- Central students scored 4.4% higher than the national average in all ten of the subject categories with the categories of "Construction Geomatics" at the highest at 12.4% and lowest category "Construction Project Administration" at 1.9%.

The communication skills category, which involves reading and interpreting plans and written correspondence and writing business letters and memos, has been an issue, both at Central and nationally. It is worthwhile to note the positive trend for CWU students in this category over the past eight years. Other than a spike in 2009 the performance has risen each year.

Category	School	2013	2012	2011	2010	2009	2008	2007	2006	2005
Communication Skills	CWU	73%	71%	69%	67%	76%	65%	63%	59%	62%
	National Average	69%	69%	63%	64%	69%	55%	66%	64%	63%

The scores in the area of communication skills have shown slight improvement over the years and are above the national average but, until 2012, have been slightly below the current AIC designated minimum score of 70%.

The scores in the area of construction safety have increased slightly over the past seven years, while the national average in this category has remained fairly constant (see table below). This is likely as a direct result of the fact that a construction specific safety class, SHM 323, Construction Safety, was added to the major four years ago as a replacement for SHM 386, Occupation Safety and Health. This change was the result of student evaluations, senior performance on the AIC Level I exam in "Construction Safety" and alumni feedback.

Category	School	2013	2012	2011	2010	2009	2008	2007	2006	2005
Construction Safety	CWU	75.4%	72.9%	76.7%	78.1%	72.9%	73%	71%	68%	67%
	National Average	73.1%	72.5%	76.1%	75.8%	73.2%	70%	73%	72%	70%

The addition of this course appears to have helped the students, even though the exit interview (focus group) designates construction safety as an area of concern. In 2013 there was a slight increase in the category of Construction Safety at 75.4%, this increase was directly attributable to a new faculty member dedicated to construction safety. This faculty member has also made significant changes to the SHM 323 course paying particular attention the information provided in the course and increasing the level of rigor in the course.

E. Student Learning Outcomes Data

Assessment data from the latest assessment cycle of evaluating student learner outcomes is detailed below. This spreadsheet includes data collected through the end of this assessment cycle; June 2012 and June 2013. It also shows data collected for the last 5 years from 2008 to 2013.

Assessment Data, Student Learner Outcomes
Central Washington University Construction Management Program

Data From Assessment Measures

Outcome		March 2008-March 2009 Year: 2008/2009					March 2009-March 2010 Year: 2009/2010					March 2010-March 2011 Year: 2010/2011					March 2011-June 2012 Year: 2011/2012							September 2012-June 2013 Year: 2012/2013						
			Measure 1		Measure 2			Measure 1		Measure 2			Measure 1		Measure 2			Measure 1		Measure 2		Measure 3*			Measure 1		Measure 2		Measure 3*	
		Target	Actual	Variance	Actual	Variance	Target	Actual	Variance	Actual	Variance	Target	Actual	Variance	Actual	Variance	Target	Actual	Variance	Actual	Variance	Actual	Variance	Target	Actual	Variance	Actual	Variance	Actual	Variance
1. Cognitive/Knowledge/Knowing																													
	Description																												
A	**Legal, Economic, Social**																												
A1	Contracts	80%	88%	8%			80%					80%	79%	-1%			80%	91%	11%					80%	83%	3%				
A2	Laws	80%	76%	-4%			80%					80%					80%							80%						
A3	Dispute resolution	80%	68%	-12%	88%	8%	80%					80%	83%	3%			80%	94%	14%					80%	91%	11%				
A4	Management principles	80%	72%	-8%			80%	87%	7%	82%	2%	80%	79%	-1%	69%	-11%	80%	76%	-4%		-80%			80%	89%	9%	81%	1%		
B	**Analytical and Systems**																												
B1	Accounting	80%					80%					80%					80%							80%						
B2	Mathematics and sciences	80%	70%	-10%			80%	58%	-22%			80%	69%	-11%			80%	79%	-1%	76%	-4%	73%	-7%	80%	68%	-12%		-80%		-80%
B3	Wood, steel and concrete	75%	84%	9%			75%	84%	9%			75%	75%	0%	94%	19%	75%	81%	6%	84%	9%			75%	77%	2%	76%	1%		
B4	Structural mechanics	80%	83%	3%			80%	83%	3%			80%	84%	4%			80%	92%	12%					80%	84%	4%				
B5	Electrical and mechanical	80%	89%	9%	87%	7%	80%	84%	4%			80%	84%	4%	91%	11%	80%	89%	9%	91%	11%			80%	87%	7%		-80%		
B6	Soils and foundations	80%	97%	17%			80%	88%	8%			80%	91%	11%			80%	93%	13%					80%	81%	1%				
B7	Financing and money	70%	82%	12%			70%	78%	8%			70%	78%	8%			70%	77%	7%	79%	9%			70%	73%	3%		-70%		
B8	Construction safety	70%	73%	3%			70%	78%	8%			70%	78%	8%			70%	77%	7%	73%	3%			70%	73%	3%		-70%		
B9	Project administration	70%	76%	6%			70%	76%	6%			70%	76%	6%			70%	75%	5%	77%	7%			70%	71%	1%		-70%		
B10	Project planning	80%	95%	15%	95%	15%	80%	88%	8%	100%	20%	80%	84%	4%			80%		-80%					80%	89%	9%	88%	8%		
2. Affective/Attitudes/Feelings and Values																													
A	**Attitudes and Behavior**																												
A1	Ethical issues	80%	86%	6%	90%	10%	80%	85%	5%	92%	12%	80%	82%	2%			80%	95%	15%	88%	8%			80%	62%	-18%	83%	3%		
A2	Team players	80%	89%	9%			80%	89%	9%			80%	89%	9%			80%	87%	7%					80%		-80%				
A3	Industry organizations	80%		-80%	Not Assessed		80%		Not Assessed			80%					80%	71%	-9%					80%	89%	9%	79			
3. Skills/Doing																													
A	**Plan and Schedule**																												
A1	Quantity take off	90%	93%	3%	98%	8%	90%	94%	4%			90%	96%	6%			90%	95%	5%					90%		-90%				
A2	Bid preparation	90%	88%	-2%			90%	89%	-1%			90%	95%	5%			90%	91%	1%	84%	-6%			90%	82%	-8%	78%	-12%		
A3	Network schedule	70%	94%	24%	80%	10%	70%	92%	22%	82%	12%	70%	94%	24%	82%	12%	70%	78%	8%	94%	24%	78%	8%	70%	74%	4%		-70%	78%	8%
B	**Material Testing**																												
B1	Soils and concrete testing	80%	90%	10%	86%	6%	80%	94%	14%	86%	6%	80%	87%	7%	93%	13%	80%	90%	10%	92%	12%	90%	10%	80%	91%	11%	88%	8%	93%	13%
B2	Surveying equipment	80%	91%	11%			80%	91%	11%			80%	93%	13%			80%	87%	7%	89%	9%			80%		-80%		-80%		
C	**Communication**																												
C1	Techncial oral report	80%	85%	5%	92%	12%	80%	82%	2%			80%	89%	9%			80%		-80%					80%	90%	10%				
C2	Business presentation	80%					80%					80%					80%							80%						
C3	Prepare working drawings	80%	90%	10%			80%	88%	8%			80%	90%	10%			80%		-80%					80%		-80%				
C4	Sketching and drawing	80%	88%	8%			80%	81%	1%			80%	90%	10%			80%	83%	3%					80%	83%	3%	93%	13%		
C5	Technical written report	80%	85%	5%	96%	16%	80%	74%	-6%			80%	85%	5%			80%		-80%					80%	87%	7%				
C6	Business writing	70%	76%	6%			70%	67%	-3%			70%	67%	-3%			70%	69%	-1%	71%	1%			70%	69%	-1%		-70%		

Shading indicates the data was collected in the spring of 2008
This is included in the March 2008 to March 2009 report
Shading indicates the data was collected from the April 2009 AIC Exam

Shading indicates the data was collected in the spring of 2009
This is included in the March 2009 to March 2010 report
Shading indicates the data was collectd from the March 2010 AIC Exam

*Measure 3 was used for this time period because it covers from March 2011 to June 2012; four academic quarters

There are 28 specific student learner outcomes that have been identified for assessment and continuous quality improvement and, at the time of this writing, data is available for nearly all of the outcomes, as indicated in the table above. Although this is a work in progress, the most recent data indicates that students are at or above the target values for nearly all measures except as noted below.

In the category of Cognitive/Knowledge/Knowing, A. During this assessment cycle the students were slightly above the target values in all areas. These values also show students improved in the area of Management Principles from -4% (2012) to a +9% and +1% (2013) for Outcome 1.A4. Students are exposed to this area in two courses, CMGT 455 and CMGT 456, senior courses that cover construction management applications. Scores continue to be above the target areas in contracts and dispute resolution.

In the category of Cognitive/Knowledge/Knowing, B. (Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems), students have performed very well. In fact, scores continue to remain strong, especially in the areas of Electrical and Mechanical Systems, Soils and Foundations, Financing and Money and Project Planning. It should be noted that the data from item 1.B2, Mathematics and Science, indicates values of only 12% below the target value of 80% from this assessment. This is an 11% decrease from previous reporting cycles. This item is assessed in IET 312, Strength of Materials, and is based on a calculus-based exam questions. Students continue to improve but, at times, struggle with calculus applications. The plan continues to emphasize integral applications in the future in this course (and others) in an attempt to strengthen students' understanding of these concepts and applications.

It should be noted that students appear to be very strong in the areas of understanding ethical issues, Construction Scheduling, Surveying and Project Layout and Engineering Concepts. This last data is supported by relatively high scores in the areas of project planning and scheduling and Surveying and Project Layout on the Spring 2013 AIC exam.

AIC exam results, Spring 2013:

Category	Possible Score	Minimum Acceptable Score	CWU School Average	National Average
Planning, Scheduling and Control	45	32 (71%)	34.88 (78%)	34.45 (74%)
Construction Geomatics	7	5 (71%)	5.50 (79%)	4.64 (66%)
Budgeting and Cost Control	33	23 (70%)	25.62 (78%)	24.02 (73%)
Bidding and Estimating	45	32 (71%)	31.15 (69%)	29.21 (65%)

As this data-based assessment process continues it will be possible in future years to identify trends and incorporate changes into the program to help provide the students with an even better education.

5. Appendix: Supporting Documents and Data

A. Complete Learner Outcomes, Tied to Department, College, University Goals
B. AIC Exam Results, Spring 2013
C. Exit Interview Form, Spring 2013
D. Senior Survey Data, Spring 2013
E. Report of Change Forms

A. Complete Learner Outcomes, Tied to Department, College, University Goals

Student Learning Outcomes (performance, knowledge, attitudes)	Related Program Goals	Related Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)
1.Cognitive/Knowledge/Knowing								
A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.	**Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.**				

1. The student shall be able to identify and explain construction contracts and the roles and responsibilities of all parties involved with 80% accuracy.					CMGT 444 and CMGT 445 Exam	Seniors	Fall	80%
2. The student shall demonstrate knowledge of lien laws, local and national labor laws and the contractors' and owners' rights pertaining to these areas with 80% accuracy.					CMGT 444 and CMGT 445 Final Exam	Seniors	Fall	80%
3. The student shall be able to explain various construction dispute resolution techniques and various steps that may be taken to avoid disputes with 80% accuracy.					CMGT 444/445 Exams	Seniors	Fall	80%
4. Students shall be able to describe basic management principles, organizational behavior and structure as these related to the construction industry with 80% accuracy.					CMGT 455/456 Quizzes or Assignments	Seniors	Spring	80%

B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.	**Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.**				
1. Students shall demonstrate an understanding of managerial accounting techniques as they relate to the construction industry with 80% accuracy.					CMGT 485 Exam or Assignment	Seniors	Spring	80%
2. Students shall demonstrate an understanding of mathematics and science; including chemistry, physics and mathematics through calculus with 80% accuracy.					IET 312 exam question on shear and moment diagrams	Juniors	Winter or Spring	80%
3. The student shall demonstrate knowledge of types and uses of construction materials, including wood, steel and concrete. This knowledge shall include understanding terminology, units of measure, sizes and gradations, standard designations,					CMGT 265 Exam questions	Sophomores	Fall or Winter Spring	75% 75%

specifications and testing techniques, with 75% accuracy.					CMGT 460/461, average of exam 1	Seniors		
4. Students shall demonstrate knowledge in the areas of structural mechanics, including statics and strength of materials with 80% accuracy.					IET 311 Exam, Find reactions for a beam	Juniors	Fall or Winter	80%
5. Students shall demonstrate an understanding of, electrical and mechanical systems with 80% accuracy.					CMGT 320, Assignment to calculate the electrical load for a house CMGT 442, Assignment to calculate the heat load for a building	Juniors/seniors Juniors/Seniors	Winter Spring	80% 80%
6. Students shall demonstrate knowledge of soil mechanics and foundation types and principles of design with 80% accuracy.					CMGT 450, Assignment to calculate the bearing capacity of a shallow foundation	Seniors	Fall	80%

7. Students shall demonstrate a working knowledge of construction cost accounting, financing, insurance, bonding, bidding and procurement practices, depreciation and expensing, cost forecasting, cash flow requirements, time value of money and project payment procedures, with 70% accuracy.					AIC Exam section; Budgeting, Costs and Cost Control, overall scores of CMGT seniors	Seniors	Spring	70%
8. The student shall demonstrate knowledge of construction safety training, procedures, record keeping, maintenance, inspection, penalties and compliance with state and federal regulations with 70% accuracy.					AIC Exam section; Construction Safety, overall scores of CMGT seniors	Seniors Juniors	Spring Fall	70% 70%

					SHM 323 Final exam, average scores			
9. Students shall demonstrate an understanding of construction project management; including concepts, roles and responsibilities of individuals, administrative systems and procedures, cost control systems, proper job site and office documentation and quality control philosophies and applications with 70% accuracy					AIC Exam section; Management Concepts, overall scores of CMGT seniors	Seniors	Spring	70%
10. Students shall be able to demonstrate knowledge of site mobilization and short term project planning, including staffing, material requirements and equipment selection and utilization with 80% accuracy.					CMGT 455/456 Project	Seniors	Spring	80%

2.Affective/Attitudes/Feelings/Values								
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	**Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.** **Goal V: Achieve regional and national prominence for the university.**				
1. Students shall be able to identify and understand ethical issues relevant to the various parties in the construction process, and to react in a manner consistent with ethical standards established by the					Average scores of CMGT 265	Sophomores	Fall or Winter	80%

construction industry associations, with 80% accuracy.					ethics assignments Average score of CMGT 444/445 ethics assignment	Seniors	Fall	80%
2. Students shall demonstrate the ability to work in groups and act as team players, with a success rate of 80%.					Average scores on CMGT 267 final project	Sophomores	Spring	80%
3. The student shall demonstrate knowledge of construction industry organizations, such as; The Associated General Contractors of America (AGC), The National Association of Home Builders (NAHB), The Mechanical Contractors Association (MCA), The American Council for Construction Education and The American Institute of Constructors. Students shall also demonstrate knowledge of the commitment and importance of these organizations to society, with 80% accuracy.					CMGT 265 Assignment or exam	Sophomores	Fall/Winter	80%

3. Skills/Doing								
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	**Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.** **Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.** **Goal V: Achieve regional and national prominence for the university.**				
1. Students shall be able to perform accurate detailed quantity takeoffs on a commercial/residential project, including all Construction					CMGT 343 Final project scores	Juniors	Winter	90%

Specification Institute (CSI) divisions, both manually and utilizing Microsoft Excel, with a success rate of 90%.								
2. Students shall be able to accurately prepare a bid, based on pricing of materials, labor, equipment, overhead and profit for a commercial/residential or heavy/civil project. In addition, students choosing the general construction option shall be able to utilize estimating software, such as Timberline, to create and submit a bid for a residential/commercial project. Students choosing the heavy/civil construction option shall be able to estimate and bid a heavy/civil project using appropriate software, with an accuracy rate of 90%.					CMGT 344/345 Final Project	Juniors	Spring	90%
3. Students shall be able to prepare, analyze and update both a Gantt chart and a network (critical path method) schedule for a commercial/residential or heavy/civil project, both manually and utilizing scheduling software (Microsoft Project, SureTrak or similar scheduling software), with a success rate of 70%.					AIC Exam section; Planning, Scheduling and Control, overall score of CMGT seniors	Seniors Seniors	Spring Fall	70% 70%

					CMGT 447 Final project average score			

B. Graduates shall be able to demonstrate basic building and material testing skills.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	**Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.** **Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.** **Goal V: Achieve regional and national prominence for the university.**				
1. Students shall demonstrate the ability to perform basic field and lab tests on construction materials, including concrete, and soils with 80% accuracy.					CMGT 450, Overall average lab scores CMGT 460/461, Slump and cylinder tests, overall average lab report scores	Seniors Seniors	Fall Spring	80% 80%
2. Students shall demonstrate the ability to properly use and care for construction surveying instruments, including					CMGT 267 Lab, overall average lab scores	Sophomores	Spring	80%

levels, transits, theodolites, tapes and electronic distance measuring devices, as these instruments relate to construction projects, with 80% accuracy.								

C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	**Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.** **Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.**	**Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.** **Goal V: Achieve regional and national prominence for the university.**				
1. Students shall be able to effectively prepare and present a technical oral report on various construction topics, with 80% success					CMGT 346/347 Student presentation average scores	Juniors	Winter	80%
2. Students demonstrate the ability to make business and professional oral presentations, with 80% success.					CMGT 485 Student presentation average scores	Seniors	Spring	80%
3. Students shall demonstrate the ability to					1 Final project average score			80%

prepare and edit a complete set of working drawings for both a residential or commercial building using AutoCAD software, with 80% accuracy.						Freshmen/Sophomores Juniors/Seniors		
4. Students shall be able to communicate graphically using standard sketching and engineering drawing techniques, including proper dimensioning, orthographic projections, sections, auxiliary views and detail views, with 80% accuracy.					CMGT 265 Sketching and drawing assignments, average scores	Sophomores	Fall/Winter	80%

5. Students shall be able to properly research a topic, using the reference materials at the library, the Internet and industry resources to prepare written technical reports, with 80% accuracy.					CMGT 346/347 Research paper average score	Juniors	Winter	80%
6. Students shall be able to clearly demonstrate their written communication skills by writing prose, business letters, resumes, and daily job reports that include proper grammar, spelling and sentence structure, with a 70% success rate.					AIC Exam section; Communication Skills on written skills, overall score of CMGT seniors	Seniors	Spring	70%

B. AIC Exam Results, Spring 2013

AIC - Constructor Certification Commission

School Report
(Graduating Seniors)

Central Washington University (WA001)

CQE Level 1 - Construction Fundamentals - April 2013

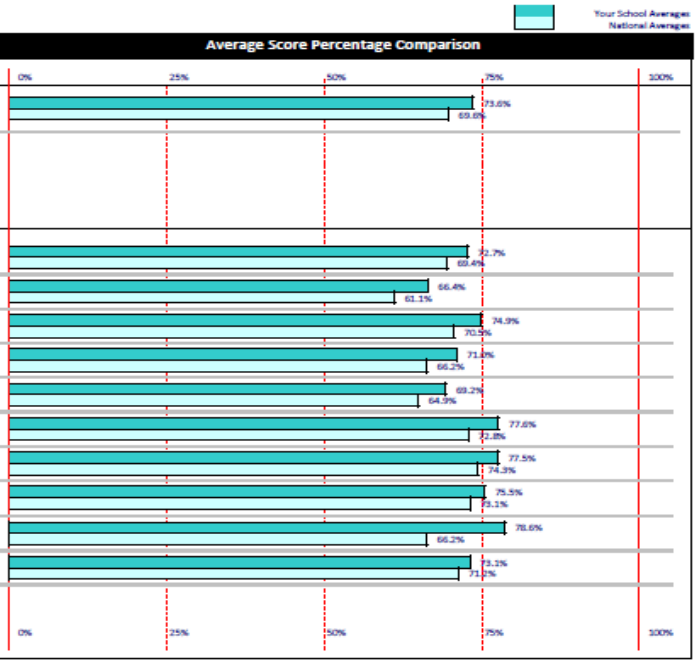
	Your School Candidates	National Candidates
Number of Candidates Tested:	26	1013
Number of Candidates Passed:	16	537
Number of Candidates Failed:	10	476

Score Summaries

Total Score	School Average	National Average	Max Possible	Passing Score
Average Total Score	220.77	208.93	300	210
Highest Total Score	255	272		
Lowest Total Score	170	75		

Area Scores (Averages)	School Average	National Average	Max Possible	Min Acceptable
Communication Skills	22.54	21.52	31	22
Engineering Concepts	9.96 **	9.16	15	11
Management Concepts	26.96	25.39	36	25
Materials, Methods, and Project Modeling and Visualization	22.00	20.53	31	22
Bidding and Estimating	31.15 **	29.21	45	32
Budgeting, Costs, and Cost Control	25.62	24.02	33	23
Planning, Scheduling, and Schedule Control	34.88	33.45	45	32
Construction Safety	15.85	15.35	21	15
Construction Geomatics	5.50	4.64	7	5
Project Administration	26.31	25.65	36	25

*** Indicates areas of weakness*



1350 BROADWAY • 17TH FLOOR • NEW YORK, NY 10018

CENTRAL WASHINGTON UNIVERSITY

Your future is Central.

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

Construction Management Exit Interview Questionnaire

This form is confidential and will be used for program assessment purposes. It is to be completed prior to graduation from the Construction Management program.

Name (optional) _____ Graduation Date _____

A. Background:

1. Why did you choose the CMGT program at CWU?
   _____
   _____

2. What previous construction-related experience have you had? _____
   _____

3. What other college level education have you had prior to coming to CWU?

   _____ None

   _____ Community College, No Degree

   _____ Community College, Associate Degree

   _____ Other University, _____ Number of hours

   _____ University Degree, Program _____

4. How did you hear about the CWU program? _____
   _____

B. Post-graduation employment:

1. Have you accepted a position? _____ yes _____ no (skip to question 3)

2. If yes, position title _____

   Starting Salary _____ Starting Date _____

   Company Name _____

   Company Address _____

   _____

- How would you best categorize this company (circle all that apply)?

General Contractor Specialty Contractor Supplier Owner Self-employed Other

- Type of work associated with your employer

_____

(commercial, residential, heavy/civil, marine, utility, mechanical, electrical, industrial, etc.)

- How did you become aware of this position?
  _____

  _____

- What factors were important in making this decision?

  _____

3. If you have not accepted a position, what is your career objective?

   _____

- Have you interviewed? _____ no _____ yes _____ number of companies

C. Continuing Education

Do you plan to obtain additional education? _____no _____ yes

_____ Graduate School - Type of Program _____

_____ Other BS program _____

_____ Special Certifications _____

D. Construction Management Education from Central Washington University

How strongly I agree that...					
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
my education experience at CWU prepared me to compete with graduates from other construction programs.	O	O	O	O	O
my studies at CWU contained a good balance between theory and application.	O	O	O	O	O
the CMGT program adequately developed my written communication skills.	O	O	O	O	O
the CMGT program adequately developed my oral communication skills.	O	O	O	O	O
the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	O	O	O	O	O
the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	O	O	O	O	O
the CMGT program prepared me well in the area of management concepts.	O	O	O	O	O
the CMGT program prepared me well in the area of materials, methods and plan reading.	O	O	O	O	O
the CMGT program prepared me well in the area of bidding and estimating.	O	O	O	O	O
the CMGT program prepared me well in the area of budgeting, costs and cost control.	O	O	O	O	O
the CMGT program prepared me well in the area of planning and scheduling.	O	O	O	O	O
the CMGT program prepared me well in the area of construction safety.	O	O	O	O	O
the CMGT program prepared me well in the area of surveying and project layout.	O	O	O	O	O
the CMGT program prepared me well in the area of project administration.	O	O	O	O	O

E. General Comments

1. What specific curriculum changes (course additions, course deletions, course changes) would you recommend?

_____
_____
_____
_____
_____

2. What do you consider to be the major strengths or most positive aspects of the construction management program?

_____
_____
_____
_____
_____

3. What suggestions (physical facilities, industry involvement, faculty, etc.) would you like to make relative to making improvements to the construction management program?

_____
_____
_____
_____
_____

4. Other comments?

_____
_____
_____
_____
_____

D. Senior Survey Data, Spring 2013

2013 CMGT Senior Focus Group Survey Data

Year: 2013
Date: 20-May-13
Surveys: 23

Satisfaction Level

1 Strongly disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly agree

No.	Comments	June Grad	Full-time Job	Salary	Type of Firm	Type of Work	Continue Education	competitive other programs	good balance	written comm.	oral comm.	computer skills	engr. concepts	manage. concepts	methods plan rdg	bidding estimating	budgeting cost control	scheduling	safety	surveying	project administration
1	small class size, Reno, building hrs	1	1	60000	GC	H/C		4	4	3	5	4	4	4	4	4	4	4	4	4	4
2	small class size, professors, build. Hrs	1					1	5	4	3	3	4	5	4	5	5	4	4	4	5	4
3	more mech., internships	1	1		Specialty	Utility	1	5	5	4	4	4	4	4	4	4	4	4	4	4	4
4	internships	1	1	65000	GC	H/C		4	4	4	3	4	3	4	4	4	4	3	3	3	4
5	more software use	1	1	41000	GC	H/C		4	4	3	3	3	4	4	4	4	4	4	3	4	3
6	class size and professors	1	1	60000	GC	Commercial		5	5	4	5	5	5	5	5	5	5	5	4	4	5
7	engineering concepts	1	1	57000	GC	Commercial		5	5	4	5	4	4	4	5	4	4	4	4	3	5
8	computer software, Reno, MCA	1	1	61000	GC	Commercial		5	4	5	5	4	5	5	5	5	5	5	5	4	5
9	computer programs, Reno						1	5	5	5	5	5	5	5	5	5	5	5	4	5	5
10	BIM	1	1	52000	GC	Residential		4	4	4	4	5	4	4	4	4	4	5	3	4	4
11	computer programs	1	1	52800	GC	H/C	1	5	4	5	4	3	4	4	5	5	3	3	2	5	4
12	program	1	1	53250	GC	Commercial	1	4	4	4	4	3	4	5	4	4	4	4	3	4	4
13	computers	1	1	42500	GC	H/C		4	4	3	5	1	4	4	3	2	4	3	5	3	4
14	use of software	1	1	55150	GC	Commercial	1	5	5	5	5	5	5	5	5	5	5	5	3	5	5
15	small class size	1	1	56000	GC	Commercial		5	4	4	5	4	5	5	5	5	4	3	3	4	4
16	more Reno	1						4	4	5	4	4	5	4	5	4	4	4	4	4	4
17	bulding hrs, computer programs	1	1		GC	H/C		5	4	5	5	5	5	5	5	5	4	5	3	5	4
18	small class size, computer programs	1					1	5	4	5	5	5	5	5	5	5	5	5	3	5	5
19	technology, recruiting companies	1	1	54000	GC	Commercial		5	5	4	4	5	4	4	4	4	4	5	4	4	4
20	heavy bid	1	1	59000	GC	H/C	1	5	5	4	4	5	5	4	5	5	4	4	5	5	4
21		1	1	51000	GC	H/C		4	4	3	4	3	4	3	4	4	3	4	4	4	3
22		1	1		GC	H/C	1	5	4	5	5	4	4	5	5	5	4	5	4	4	4
23	software	1	1	57200	GC	H/C	1	5	4	4	4	3	4	4	5	4	4	4	4	4	4
24																					
25																					
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39																					
		22	**19**	**$54,806**			**10**	**4.65**	**4.30**	**4.13**	**4.35**	**4.00**	**4.39**	**4.35**	**4.57**	**4.39**	**4.13**	**4.22**	**3.70**	**4.17**	**4.17**

Employment Industry Type

Comercial	7
H/C	10
Mechanical	
Residential	1
Other	1

Common Comments:

More software training
Increase building hours
Make internships mandatory

19 of 23 respondents indicated full time employment

E. Report of Change Forms

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: September 1, 2012 Name: Warren Plugge

Description of concern:

Dave Carns and Bill Bender are scheduled to go on phased retirement starting Fall of 2012.

How and when the concern was identified:

Concern was identified in the Spring 2012.

Actions taken or to be taken:

Starting Fall 2012 Dave Carns will teach courses in the Fall and Winter quarters and Bill Bender will teach courses in the Winter and Spring quarters.

Review method and timeline:

With the additional faculty these changes have created a seamless transition between faculty members.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: Winter 2013 Name: Warren Plugge

Description of concern:

With CMGT 320 being offered in the Spring quarter, this does not align with the proper flow of classes into the curriculum.

How and when the concern was identified:

Concern was identified due to conflicts with student schedules in their senior year.

Actions taken or to be taken:

Move CMGT 320 from Spring to Winter quarter.

Review method and timeline:

CMGT 320 will be offered in Winter 2014 instead of Spring.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: November 15, 2012 Name: Warren Plugge

Description of concern:

Use of Microsoft Project is slowly being phased out from most companies. Owner demands have required contractors to use P6.

How and when the concern was identified:

Industry advisory board suggested changing from Microsoft Project to P6 during a industry advisory board meeting due to its usage across multiple projects and companies.

Actions taken or to be taken:

P6 is being used in place of Microsoft Project. This program has been added to all computers in our labs.

Review method and timeline:

Since this is the first year the program there were several bugs that have had to be worked out to make the program functional with the computers on campus and get it ready for student use. This is an issue with many programs used within the Construction Management program.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: September 1, 2012 Name: Warren Plugge

Description of concern:

Additional CMGT faculty.

How and when the concern was identified:

Not necessarily a concern, but with Dave Carns and Bill Bender taking half time phased retirement this has created a need for a new faculty member.

Actions taken or to be taken:

Starting September 1, 2012 Professor David Martin was hired to teach many of the commercial courses including Blueprint Reading, Scheduling, Estimating I and Estimating II for Commercial Construction and Concrete.

Review method and timeline:

David Martin has integrated very well with existing faculty and the students.

D. Actions to Address Prior Cited Weaknesses

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

Prior Cited Weaknesses:

ADMG 385, Business Communication and Report Writing is classified as a "General Education, written communication" course rather than a "Business and Management" course. This leaves the curriculum 5 quarter credits short in the "Business and Management" category (Document 103, Section III, 3.3.2). This issue was discussed in III.B.4 of the report.

Actions Taken:

To address the Business and Management weakness as stated above the Construction Management program adjusted the curriculum to incorporate five (5) courses that could be taken for ten (10) credit hours to bring the program's quarter credits up to the ACCE standard of 27 quarter credit hours as stated in Document 103, Section III, 3.3.2. This adjustment to the curriculum allows students flexibility in their schedules.

Course	Course Description	Credits
HRM 381	Management of Human Resources	5
MGT 380	Organizational Management	5
MKT 360	Principles of Marketing	5
ADMG 201	Introduction to Business	3
ADMG 372	Leadership and Supervision	4

Supporting Documentation

SAMPLE OF ASSESSMENT DATA COLLECTION

SAMPLE: Student Assessment Data Collection Table

Assessment Data, Student Learner Outcomes
Central Washington University Construction Management Program

Data From Assessment Measures

September 2012-June 2013

Year: 2012/2013

Outcome			Measure 1		Measure 2		Measure 3*	
		Target	Actual	Variance	Actual	Variance	Actual	Variance
1. Cognitive/Knowledge/Knowing								
	Description							
A	**Legal, Economic, Social**							
A1	Contracts	80%	83%	3%				
A2	Laws	80%						
A3	Dispute resolution	80%	91%	11%				
A4	Management principles	80%	89%	9%	81%	1%		
B	**Analytical and Systems**							
B1	Accounting	80%						
B2	Mathematics and sciences	80%	68%	-12%		-80%		-80%
B3	Wood, steel and concrete	75%	77%	2%	76%	1%		
B4	Structural mechanics	80%	84%	4%				
B5	Electrical and mechanical	80%	87%	7%		-80%		
B6	Soils and foundations	80%		-80%				
B7	Financing and money	70%	73%	3%		-70%		
B8	Construction safety	70%	73%	3%		-70%		
B9	Project administration	70%	71%	1%		-70%		
B10	Project planning	80%	89%	9%	88%	8%		
2. Affective/Attitudes/Feelings and Values								
A	**Attitudes and Behavior**							
A1	Ethical issues	80%	62%	-18%	83%	3%		
A2	Team players	80%		-80%				
A3	Industry organizations	80%	89%	9%	79			
3. Skills/Doing								
A	**Plan and Schedule**							
A1	Quantity take off	90%		-90%				
A2	Bid preparation	90%	82%	-8%	78%	-12%		
A3	Network schedule	70%	74%	4%		-70%	78%	8%
B	**Material Testing**							
B1	Soils and concrete testing	80%	91%	11%	88%	8%	93%	13%
B2	Surveying equipment	80%		-80%		-80%		
C	**Communication**							
C1	Techncial oral report	80%	90%	10%				
C2	Business presentation	80%						
C3	Prepare working drawings	80%		-80%				
C4	Sketching and drawing	80%	83%	3%	93%	13%		
C5	Technical written report	80%	87%	7%				
C6	Business writing	70%	69%	-1%		-70%		

Sample Rubric for Assessment Items 1A.3 and 2A.3
CMGT 445 Legal Principles Moot Trial Grading Rubric

Plaintiff:_____ Defendant: _____

Case:_____ Group #_____

Date:_____

Plaintiff/Defendant Presentation

Content	Plaintiff	Defendant	Points Possible
1.1 Keyed in on important issues.			(05)
1.2 Dressed appropriately			(03)
1.3 Material was presented in an organized manner			(05)
1.4 Audio/visual aids supported case			(03)
1.5 Stated key terms/previous rulings on case			(05)
Presentation			
2.1 Spoke clearly and loud enough to be heard			(03)
2.2 Used correct grammar and language			(03)
2.3 Spoke at a satisfactory rate			(03)
2.4 Used natural movements and appeared relaxed			(03)
2.5 Looked at audience and maintained eye contact			(02)
Total Points	_____		

Total Points (35)

What did the speaker do well?

Comments:

SAMPLE: Ruberic for Assessment Items 1A.3 and 2A.1
Project Evaluation

Goup Names
Project Title

		Points	(Possible)
Presentation			
Followed suggested format			(05)
Key information provided.			(05)
General Organization			(05)
Key components in case:			
Stated issues surrounding the case?			(05)
Key terms identified:			(05)
Rules properly stated.			(05)
Established a plan for analysis.			(05)
Stated legal opinion:			(05)
Content			
Punctuation			(02)
Grammar			(02)
Logical solutions stated (Can the logic be followed by the reviewer?)			(02)
Creativity			(02)
Backup information provided			(02)
	Subtotal	0	(50)
Presentation Points			(35)
(See sheet for item deductions)			
	Total	0	(85)

Comments

SAMPLE: Continuous Quality Improvement
CMGT 445- Heavy Civil Contract Law
Fall 2013
Continuous Quality Improvement
Assessment Items – 1A.1, 1A.3 and 2A.1

General Information

For SOEI information see back page

Grading: Approximate Point Values	
Evaluation	**Points**
Homework and Case Studies	100
WSDOT Questions & Exam	100
Three exams and unannounced quizzes	200
Participation, Presentations, ICA's	100
Final Exam	100
Total	**600**

Final Grade	QTY
A	1
A-	0
B+	1
B	1
B-	3
C+	0
C	2
C-	3
Total	11

Grade Summary

Test Averages						
Quarter	**T1**	**T2**	**T3**	**Final Exam**	**WSDOT Exam**	**Final Project**
Fall 07	83.67	84.33		79.17		91.08
Fall 08	76.14	85.16		78.82		90.61
Fall 09	68.8	67.0	80.13	79.81		87.80
Fall 10	68.2	65.9	79.2	76.2	88.7	83.25
Fall 11	80.14	72.59	83.04	72.50	87.04	94.36
Fall 12	73.9	70.0	80.9	75.4	83.6	88.7
Fall 13	69.5	62.0	75.9	79.6	75.9	89.9

Comments

This quarter the class went fairly well. The quality of student work seemed to be OK. Again, I did utilize the WSDOT standard specifications to give students the opportunity to learn the language around the specifications. I also had to build an answer key with the specification questions to assure the grading was consistent. The WSDOT test was done online and students could take it with an open book

I also spent a good deal of time making sure material was reviewed prior to the test. One change I did this quarter is that I gave them a study guide on the first day of class and continued that process though out the quarter. What was emphasized on the study guide was the fact that students need to work their way down the study guide as they read the chapters. Very few chapter quizzes were given during the course which think had an effect on the overall percentages. Not sure students were keeping up with the reading. Next, quarter I will be trying an online quiz system to make sure students are reading.

I am a little concerned over the fact that very few students completed the SOEI process, which seems to affect overall scores. There were very few comments from these students.

Overall this group of students seemed to struggle a bit. Although scores were not outstanding, they were however consistent with student's performance in previous courses. Students that had to be constantly monitored included Reyna Perez, Eduardo Sanchez, Kyle Behla, Mike Jones (he did improve during the course) and Michael Fennerty.

SOEI Data

	F12	F13	F14
	Course Avg.	Course Avg.	Course Avg.
Enrolled	15	11	
SOEI's Rec.	12	3	
Environment			
1.a	3.75	4.00	
1.b	4.17	3.67	
1.c	4.25	3.67	
1.d	4.75	4.67	
1.e	75%	100	
1.f	3.80	3.50	
Avg.	4.14	4.00	
Learning			
2.a	4.00	4.00	
2.b	3.67	3.50	
2.c	3.50	3.00	
2.d	3.92	4.00	
2.e	2.67	3.00	
2.f	3.75	4.00	
2.g	3.67	2.00	
2.h	3.50	2.00	
2.i	4.00	3.50	
2.j	3.75	4.00	
2.k	3.92	4.00	
2.l	4.25	4.00	
Avg.	3.72	3.42	

Assessment Data

Item	Term	
	Fall 2012	Fall 2013
1A.1	83%	75.8%
1A.3	91%	89.7%
2A.1	86%	90.1%

Student Evaluatioin of Instruction (SOEI) Form, Sample from CMGT 445, Heavy Civil Contract Law

Central Washington University
Fall 2013 - Form A

Course: CMGT445.001 : Heavy Civil Contract Law

Instructor: Philip Plugge *

1 - To what extent do you agree or disagree that Philip Plugge...

a. fostered a fair and respectful learning environment?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	3	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: 4.00 (Question), 4.27 (Dept), 4.54 (College)

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
3/11 (27.27%)	4.00	0.00	4.00	384	4.27	1.12	5.00	2,827	4.54	0.81	5.00

1 - To what extent do you agree or disagree that Philip Plugge...

b. seemed genuinely concerned with whether you learned?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	66.67%
Neutral	(3)	1	33.33%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: 3.67 (Question), 4.15 (Dept), 4.45 (College)

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
3/11 (27.27%)	3.67	0.58	4.00	384	4.15	1.17	5.00	2,818	4.45	0.91	5.00

1 - To what extent do you agree or disagree that Philip Plugge...

c. clearly communicated and enforced standards of behavior?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	66.67%
Neutral	(3)	1	33.33%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: 3.67 (Question), 4.29 (Dept), 4.44 (College)

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
3/11 (27.27%)	3.67	0.58	4.00	382	4.29	1.05	5.00	2,812	4.44	0.88	5.00

1 - To what extent do you agree or disagree that Philip Plugge...

d. met class at scheduled times unless otherwise arranged?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	2	66.67%
Agree	(4)	1	33.33%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: 4.67 (Question), 4.56 (Dept), 4.63 (College)

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
3/11 (27.27%)	4.67	0.58	5.00	378	4.56	0.82	5.00	2,789	4.63	0.71	5.00

Central Washington University
Fall 2013 - Form A

Course: CMGT445.001 : Heavy Civil Contract Law

Instructor: Philip Plugge *

2 - Did you seek help from Philip Plugge outside of class during the course?

Response Option	Weight	Frequency	Percentage
Yes	(1)	2	100%
No	(2)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 1.00 | Dept 1.28 | College 1.45

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	1.00	0.00	1.00	372	1.28	0.45	1.00	2,759	1.45	0.50	1.00

3 - If YES, was Philip Plugge available to provide help?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	1	50%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 3.50 | Dept 4.29 | College 4.41

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.50	0.71	3.50	301	4.29	0.99	5.00	1,779	4.41	0.89	5.00

4 - To what extent do you agree or disagree that the... Philip Plugge

a. course objectives were clearly communicated?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 4.00 | Dept 4.22 | College 4.40

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	382	4.22	1.07	5.00	2,818	4.40	0.89	5.00

4 - To what extent do you agree or disagree that the... Philip Plugge

b. overall course content was presented in an understandable sequence?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	1	50%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 3.50 | Dept 4.14 | College 4.30

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.50	0.71	3.50	381	4.14	1.09	4.00	2,812	4.30	0.97	5.00

Central Washington University
Fall 2013 - Form A

Course: CMGT445.001 : Heavy Civil Contract Law

Instructor: Philip Plugge *

4 - To what extent do you agree or disagree that the...
Philip Plugge

c. Instructor used a variety of methods, as needed, to make content clear?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	1	50%
Neutral	(3)	0	0%
Disagree	(2)	1	50%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 3.00 | Dept 4.05 | College 4.28

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.00	1.41	3.00	382	4.05	1.18	4.00	2,811	4.28	1.01	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

d. assignments and tests were connected to course content?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	1	50%
Agree	(4)	0	0%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 4.00 | Dept 4.31 | College 4.48

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	1.41	4.00	382	4.31	1.01	5.00	2,820	4.48	0.80	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

e. evaluation and grading techniques were clearly explained?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	1	50%
Neutral	(3)	0	0%
Disagree	(2)	1	50%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 3.00 | Dept 4.09 | College 4.28

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.00	1.41	3.00	382	4.09	1.19	5.00	2,818	4.28	1.03	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

f. instructions for class activities were clearly communicated?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 4.00 | Dept 4.08 | College 4.29

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	382	4.08	1.16	4.00	2,813	4.29	0.99	5.00

Central Washington University
Fall 2013 - Form A

Course: CMGT445.001 : Heavy Civil Contract Law

Instructor: Philip Plugge *

4 - To what extent do you agree or disagree that the...
Philip Plugge

g. instructor provided useful feedback on student work?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	0	0%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	1	50%

Percent Responses: 0 25 50 75 100

Means: Question 2.00 | Dept 3.93 | College 4.23

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	2.00	1.41	2.00	381	3.93	1.31	4.00	2,817	4.23	1.07	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

h. instructor provided timely feedback on student progress?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	0	0%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	1	50%

Percent Responses: 0 25 50 75 100

Means: Question 2.00 | Dept 3.93 | College 4.22

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	2.00	1.41	2.00	381	3.93	1.33	4.00	2,815	4.22	1.10	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

i. class sessions were well organized?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	1	50%
Neutral	(3)	1	50%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 3.50 | Dept 4.19 | College 4.30

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.50	0.71	3.50	381	4.19	1.02	4.00	2,814	4.30	0.98	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

j. out-of-class work was useful in understanding course content?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

Percent Responses: 0 25 50 75 100

Means: Question 4.00 | Dept 4.20 | College 4.32

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	381	4.20	1.08	5.00	2,811	4.32	0.94	5.00

Central Washington University
Fall 2013 - Form A

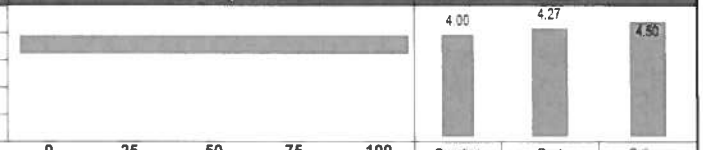
Course: CMGT445.001 : Heavy Civil Contract Law

Instructor: Philip Plugge *

4 - To what extent do you agree or disagree that the...
Philip Plugge

k. instructor encouraged students to connect course content to issues beyond the university classroom?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

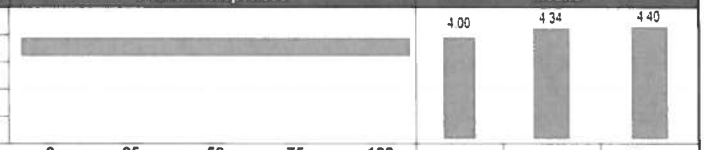


Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	381	4.27	0.99	5.00	2,809	4.50	0.78	5.00

4 - To what extent do you agree or disagree that the...
Philip Plugge

i. course activities challenged students to think critically?

Response Option	Weight	Frequency	Percentage
Strongly agree	(5)	0	0%
Agree	(4)	2	100%
Neutral	(3)	0	0%
Disagree	(2)	0	0%
Strongly disagree	(1)	0	0%

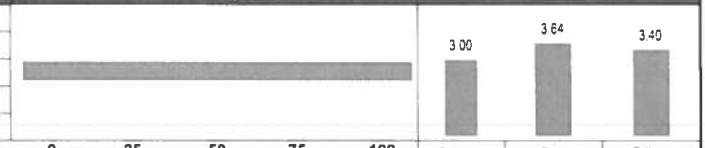


Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	377	4.34	0.96	5.00	2,794	4.40	0.88	5.00

5 - How would you compare this course with other courses of similar credits at this level (i.e., 100, 200, 300, etc.) taken at CWU? Was the...

a. amount of work OUTSIDE of class

Response Option	Weight	Frequency	Percentage
Much more than most courses?	(5)	0	0%
More than most courses?	(4)	0	0%
About average?	(3)	2	100%
Less than most courses?	(2)	0	0%
Much less than most courses?	(1)	0	0%

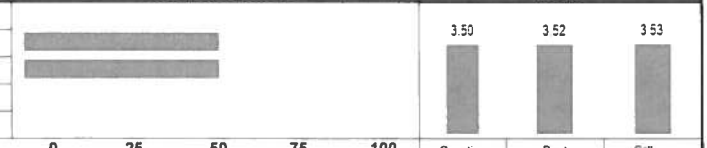


Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.00	0.00	3.00	379	3.64	0.87	4.00	2,749	3.40	0.87	3.00

5 - How would you compare this course with other courses of similar credits at this level (i.e., 100, 200, 300, etc.) taken at CWU? Was the...

b. level of engagement/active learning IN class

Response Option	Weight	Frequency	Percentage
Much more than most courses?	(5)	0	0%
More than most courses?	(4)	1	50%
About average?	(3)	1	50%
Less than most courses?	(2)	0	0%
Much less than most courses?	(1)	0	0%



Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.50	0.71	3.50	374	3.52	0.96	4.00	2,711	3.53	0.95	3.00

Central Washington University
Fall 2013 - Form A

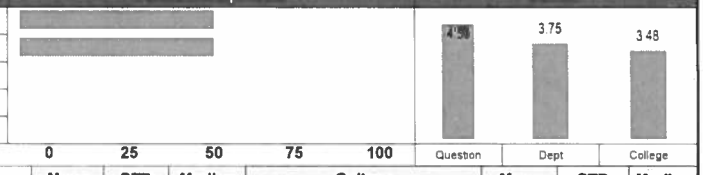
Course: Heavy Civil Contract Law

Instructor:

5 - How would you compare this course with other courses of similar credits at this level (i.e., 100, 200, 300, etc.) taken at CWU? Was the...

c. intellectual challenge presented to you

Response Option	Weight	Frequency	Percentage
Much more than most courses?	(5)	1	50%
More than most courses?	(4)	1	50%
About average?	(3)	0	0%
Less than most courses?	(2)	0	0%
Much less than most courses?	(1)	0	0%



Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.50	0.71	4.50	373	3.75	0.90	4.00	2,697	3.48	0.91	3.00

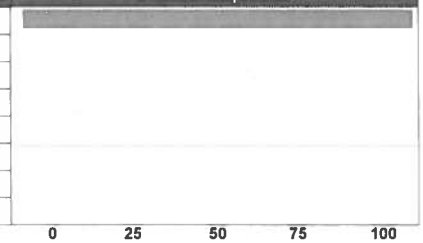
6 - For this class, about how many hours outside of class did you spend in a typical 7-day week studying, reading, conducting research, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities?

Response Option	Weight	Frequency	Percentage
0 hours per week	(1)	0	0%
1-3 hours per week	(2)	0	0%
4-6 hours per week	(3)	1	50%
7-10 hours per week	(4)	1	50%
11-15 hours per week	(5)	0	0%
16-20 hours per week	(6)	0	0%
21+ hours per week	(7)	0	0%

Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	3.50	0.71	3.50	379	3.54	1.21	3.00	2,763	3.04	1.12	3.00

7 - Why did you take this course?

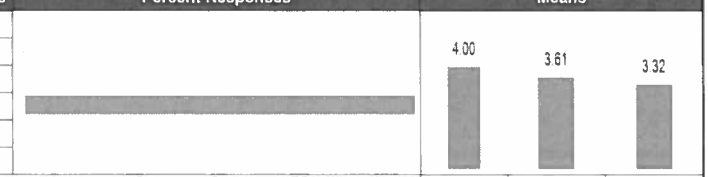
Response Option	Weight	Frequency	Percentage
Major requirement	(1)	2	100%
Minor requirement	(2)	0	0%
Certificate requirement	(3)	0	0%
Fulfills General Education requirement	(4)	0	0%
Reputation of instructor	(5)	0	0%
Time of day	(6)	0	0%
General interest	(7)	0	0%
Other	(8)	0	0%



Return Rate	2/11 (18.18%)

8 - What is your class standing?

Response Option	Weight	Frequency	Percentage
Freshman (0-44 credits)	(1)	0	0%
Sophomore (45-89 credits)	(2)	0	0%
Junior (90-134 credits)	(3)	0	0%
Senior (135 credits)	(4)	2	100%
Graduate	(5)	0	0%
Other (e.g. post-baccalaureate)	(6)	0	0%



Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.00	0.00	4.00	372	3.61	0.89	4.00	2,746	3.32	1.03	3.00

Central Washington University
Fall 2013 - Form A

Course: CMGT445.001 : Heavy Civil Contract Law

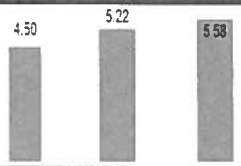
Instructor: Philip Plugge *

9 - What grade do you expect to earn in this class?

Response Option	Weight	Frequency	Percentage
A	(6)	0	0%
B	(5)	1	50%
C	(4)	1	50%
D	(3)	0	0%
F	(2)	0	0%
Other (Pass/Fail, etc.)	(1)	0	0%

Percent Responses

Means



Return Rate	Mean	STD	Median	Dept	Mean	STD	Median	College	Mean	STD	Median
2/11 (18.18%)	4.50	0.71	4.50	380	5.22	0.98	5.00	2,758	5.58	0.71	6.00

10 - What aspects of the teaching or content in this course do you feel were especialiy good?

Return Rate	0/11 (0%)

11 - What changes could be made to improve learning in this course?

Return Rate	0/11 (0%)

Central Washington University (WA001)

CQE Level 1 - Construction Fundamentals - April 2014

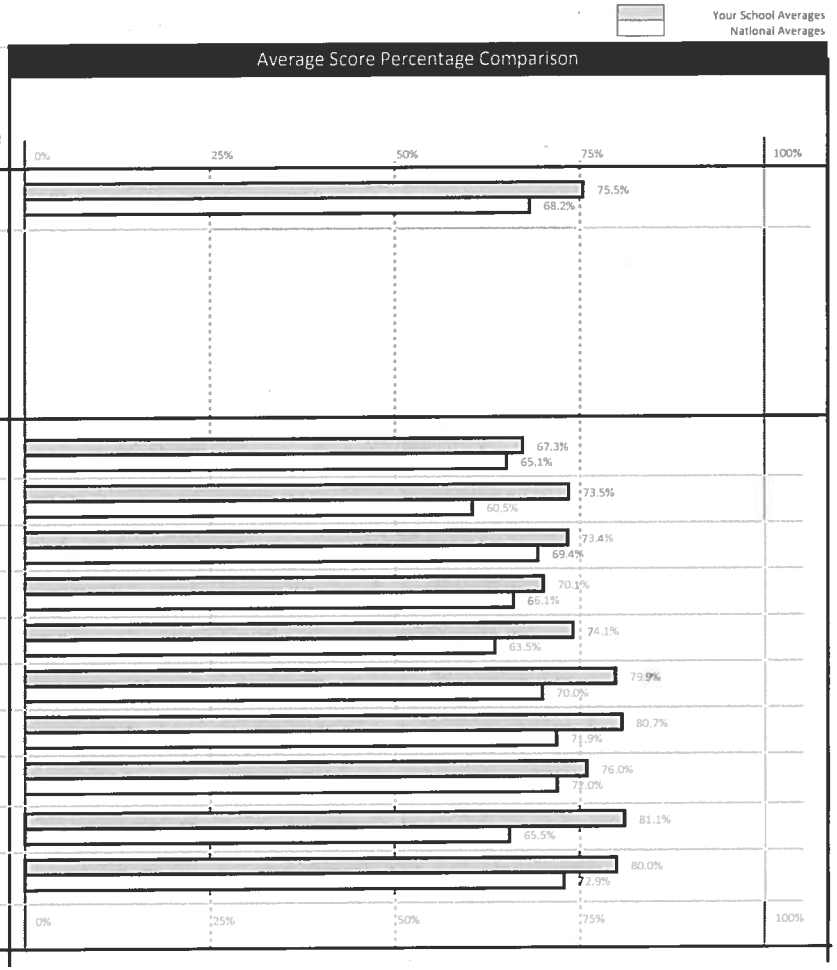
	Your School Candidates	School Requirement Candidates
Number of Candidates Tested:	31	973
Number of Candidates Passed:	24	478
Number of Candidates Failed:	7	495

Score Summaries

Total Score	Your School Average	School Requirement Candidate Average	Max Possible	Passing Score
Average Total Score	**226.55**	**204.72**	300	210
Highest Total Score	264	275		
Lowest Total Score	163	12		

Area Scores (Averages)	Your School Average	School Requirement Candidate Average	Max Possible	Min Acceptable
Communication Skills	20.87 **	20.20	31	22
Engineering Concepts	11.03	9.07	15	11
Management Concepts	26.42	24.98	36	25
Materials, Methods, and Project Modeling and Visualization	21.74 **	20.48	31	22
Bidding and Estimating	33.35	28.60	45	32
Budgeting, Costs, and Cost Control	26.35	23.10	33	23
Planning, Scheduling, and Schedule Control	36.32	32.35	45	32
Construction Safety	15.97	15.11	21	15
Construction Geomatics	5.68	4.59	7	5
Project Administration	28.81	26.25	36	25

*** Indicates areas of weakness*



2014 Alumni Survey Tabulated Results

1. What year did you graduate from CWU?

Year	Responses
2014	2
2013	1
2012	4
2011	5
2010	3
2009	2
2008	3
2007	1
2006	2
2005	3
2004	2

N = 28

2. Please indicate your current employment:

#	Answer	Response	%
1	Residential	1	4%
2	Commercial	11	39%
3	Heavy/Civil/Marine	11	39%
4	Industrial	2	7%
5	Utility	2	7%
6	Material or equipment supplier	0	0%
7	Mechanical	0	0%
8	Electrical	0	0%
9	Other	1	4%
10	Owner (public agency)	0	0%
11	Construction Management	1	4%
12	Self-employed	0	0%
13	Other	1	4%

N = 28

3. How many employers have you had since graduation?

# of Employers	Responses
1	18
2	5
3	1
4	2
5	1

N = 27

4. What is your current salary?

Actual Salaries ($1000), CMGT Alumni Survey 2014

Year of Graduation	High Salary (x$1000)	Intermediate Salaries					Low Salary	Avg. Salary
2009	80	80					80	80
2010	120	92	54				54	88.7
2011	85	80	75	70	65	65	65	73.3
2012	65	63	62				62	63.3
2013	61						61	61
2014	82	68	30				30	58.4

N = 28

5. Have you continued your education since graduating from CWU?

#	Answer	Response	%
1	I have not engaged in any formal continuing education	10	38%
2	I have taken seminars and short courses	13	50%
3	I am pursuing or have obtained an advanced degree. If so, please indicate degree(s):	3	12%
	Total	**26**	**100%**

Note: Those who indicated an advanced degree stated they were pursuing MBA's or an MBA in Project Management.

6. EDUCATION FROM CENTRAL WASHINGTON UNIVERSITY: How strongly I agree that:

	Question	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Mean
1	my education experience at CWU prepared me to compete with graduates from other construction programs.	0	0	0	11	14	25	4.56
2	my studies at CWU contained a good balance between theory and application.	0	0	4	12	9	25	4.20
3	the CMGT program adequately developed my written communication skills.	0	0	6	14	5	25	3.96
4	the CMGT program adequately developed my oral communication skills.	0	0	7	12	6	25	3.96
5	the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	0	4	3	12	6	25	3.80
6	the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	0	1	2	14	8	25	4.16
7	the CMGT program prepared me well in the area of management concepts.	0	2	5	11	7	25	3.92
8	the CMGT program prepared me well in the area of materials, methods and plan reading.	0	0	2	14	9	25	4.28
9	the CMGT program prepared me well in the area of bidding and estimating.	0	1	3	13	8	25	4.12

10	the CMGT program prepared me well in the area of budgeting, costs and cost control.	1	4	6	8	6	25	3.56
11	the CMGT program prepared me well in the area of planning and scheduling.	0	0	3	13	9	25	4.24
12	the CMGT program prepared me well in the area of construction safety.	0	0	6	12	7	25	4.04
13	the CMGT program prepared me well in the area of surveying and project layout.	0	0	5	12	8	25	4.12
14	the CMGT program prepared me well in the area of project administration.	0	1	9	8	7	25	3.84

N = 25

7. What specific curriculum changes (course additions, course deletions, course changes) would you recommend?

Text Response
Add a PMP prep course. This project management certification has a lot of industry value.
Add: Budgeting, cost control, cost forecasts Project risk/ reward evaluations Changes: Engineering classes (stats, strengths, pavement design) need to be more geard toward application. process rather then crunching numbers
Expansion of blueprint readying and estimating scopes
It was pretty well balanced good basic knowledge.
Additional time spent on contracts, rfi's, change orders, submittals and more customer interface/relations information.
Graduates of the program need to have a greater understanding of how to use BIM and how to manipulate BIM models. More (and more vigerous) coursework relating to BIM, AutoCAD and P6 should be included. Also a greater understanding of contract structures and cash flow should be taught. The courses that I would consider most expendeble are some of the methods and materials classes that didn't really teach me anything tangible.
Construction contracts
As a PM for a smaller company it would have been helpful to cover a bit more contract law/subcontracts. A deeper look at CAD and scheduling softwares would also have been beneficial. Overall I feel CWU gave me the tools and knowledge I needed and it was up to me to utilize them as I got comfortable with my job.
None
N/A
No changes
A class dealing with project owner/owners reps. Philosophies and strategies to approach negotiated projects, contract types and changes in the scope of work.
None
None
I would recommend adding or changing a more experienced/effective professor for the civil focus of the CMGT program. I would also add an estimating course. I would have like to see more companies come for internship opportunities during summers.
More focus on understanding different commercial building types and more visits to various jobsites. Focus on more than just residential/heavy civil (Roads & Bridges) and light commercial. Ex. Water Treatment, infrastructure, high voltage, wind energy, marine. These were only discussed very briefly. Special speakers or class sessions to go through each of these would open students eyes to some more of the possibilities that there are in the CMGT field. More focus on cost management.
On the Heavy Civil side, add a class that is more in depth on cost controls and budgets.
More about project management, subcontracts, cost reporting, change orders and RFIs.
Falsework and Equipment Selection Courses
Adding bluebeam, P6, BIM modeling/revit, LEED, contract negotiations
More into paving and drainage
Schedule - Use P6 Survey - Use GPS & Modeling Software Require more safety Writing and Presentation skills
I would have a class on professional writting (ie letters, memo, email). Also try to have more jobsite visit throughout the progam. I feel like this would help more students to see how the work is done and get an understanding of that. Also allow them to see what the management team does on a daily basis.
construction accounting, better scheduling class
Course material was adequate for on job requirements.

N = 25

8. What do you consider to be the major strengths or most positive aspects of the construction management program?

Text Response
The size and alumni connections. It is a competitive program and offers easy access to companies in the puget sound area.
Class size, work load somewhat reflects real life work load, problem solving and working within a group
Hands on labs, good engineering background
Smaller classes and more interaction with the professors. Good reputation with future employeers.
It is extremely competitive with bigger construction programs around the country.
David Carns and Bill Bender and Scarlett (AutoCAD). I don't think it is a coincidence that the courses that helped prepare me the most for my current job were all taught by those professors. The curriculum is secondary to the instructor.
diversified and in depth training for a broad range of construction related fields
The staff was definitely the strongest point. Professor Carnes, Bender, Whelan, & Plugge were able to effectively communicate the material and provide diverse field experience from their careers.
Variety of classes, and small class sizes.
Management, Communications, Estimating, Costs, Scheduling
Industry involvement
Overall knowledge of the construction industry and estimating project costs.
Engineering aspect in many commercial classes. Reno
Carns
The strength of the senior professors and the structure of the courses. I believe more job situational/practical courses or demonstration would have been helpful. Being more involved with summer internship assistance.
The focus on ASC competitions is great. Students that participate in this get a huge leg up on other students. Suggest that other students have the opportunity to do a project or two that are line the ASC competition.
Reno
The hands on experiance. Actually mixing your own concrete design, laying out gridlines and bending conduit. That is the experiance you do not get from other schools.
Engineering and Scheduling
Estimating, concrete, project mgmt, scheduling. Loved the fact I knew each professor and student on a personal level. It was a very intimate program that allowed me to collaborate amongst peers and utilize the staff as a resource for my studies.
the hands on approach and the small class size, compared to my peers
Small classes, heavy/civil option
The small class sizes. The professors being available most parts of the day to answer questions.
reputation
Great professors

N = 25

9. What suggestions (physical facilities, industry involvement, faculty, etc.) would you like to make relative to making improvements to the construction management program?

Text Response
Build an estimating consulting program for Seattle based firms. This could open up learning opportunities, cashflow and industry exposure to CWU talent.
NA
Better computer lab. More access to industry software
Been to long since garaduation to know what is needed now.
More onsite tours/visits for students.
Dr Whelan needs to go. He had little instructive worth and mostly wasted his time and his classes time. It was disappointing because he taught courses that could have been very beneficial.
n/a at this time
Field experience, push field experience whether it be PE internships or summer jobs as laborer/carpenter you can never have enough field experience early in your career. To be effective at your job you need to be able to see and know first hand how the building is built to be able to apply the education CWU provides.
None
N/A
Recently, I have been involved in the hiring process for my company. The new hires that have previous field experience far out shine those with little experience. Anyway to increase the students understanding of field operations and how what they are learning applies to the work in the field would be beneficial.
In my opinion additional industry involvement. The more the program can expose the students and the program to the industry the better.
Would've liked more industry professional involvement.
None
Giving the students an accurate and more realistic idea of what to expect from Construction Management. Explanation from 2-4 year industry individuals to give suggestions or description of what to expect. Invitation of alumni and encouraging communication among alumni and current students.
More jobsite tours
Hire a formal grad, with at least 5 years experience to teach a night a week and go over actual job duties, expectations, and work/time management, ect.
Have more GC's and Subs come in to lecture about the project management, cost and contract side of construction.
None at this time.
Can't think of any at the moment
I think they did good for the community and industry involvement. You had a range of small and large contractors.
Get the faculty more involved with the insustry
More industry involvement with jobsite visits. More discussion with company management teams on the skills needed for cm graduates.
more relationships with contractors
More contractor seminars

N = 25

10. Other comments?

Text Response
The program offers a lot of competitive development, which keeps students engaged and pride in our program. Would it be possible to host a regional event at Hogue Tech to show off the facility and keep that competitive atmosphere alive?
NA
No
None
N/A
Cheating is rampant. You probably already have a good idea of who is doing it. Several of my graduating class would not have been able to pass if not for cheating. This makes the value of my degree and the quality of education through our program look much worse when these people graduate without understanding what they are doing. Also I would reach out to more kids in high schools, as well as underclassmen at the school and educate them about the industry and what the opportunities are. I am confident that you could get more qualified applicants if you tried.
n/a
n/a
The program as a whole gets the students involved in a variety of aspects in our industry. However, there are many things you are unable to learn in a classroom, which is why the internship is so critical. It allows you to apply what you have learned in the classroom to real world applications. It also always the student to gain a different perspective and bring constructive ideas back to the classroom.
N/A
None
I think it is a great program that set me up for a successful career in the construction industry.
Great program, learned a lot!
None
Keep effective, experienced, well-rounded, fair, and likeable professors in the program. Listen to student feedback about professors and continue to keep high-level education/experience within the program.
None
None
Keep up the good work.
None at this time.
Glad I graduated from CWU
None
Na
None
No
Field trips to job sites are a great learning experience for up and coming CMGT students.

N = 25

11. CWU MISSION AND GOALS: These next few questions relate to CWU's Mission and General Education goals. How strongly do you agree that your education from CWU helped you?

#	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Mean
1	become a responsible citizen	0	0	8	14	3	25	3.80
2	become a responsible steward of the earth	0	1	10	12	2	25	3.60
3	become a productive and enlightened (informed, good learner, insightful) individual	0	0	5	14	6	25	4.04
4	value different perspectives	0	1	6	15	3	25	3.80
5	appreciate the breadth and depth of scientific and human knowledge	0	1	6	14	4	25	3.84
6	increase your sense of the interconnectedness of knowledge	0	1	6	15	3	25	3.80
7	integrate knowledge from diverse fields to solve problems	0	0	4	15	6	25	4.08
8	increase your awareness of the many ways that knowledge evolves	0	1	7	10	7	25	3.92
9	ask incisive and insightful questions	0	0	4	17	4	25	4.00

Report of Change Forms

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: September 24, 2014 Name: Warren Plugge

Description of concern:

During the Summer of 2014 Professor Bill Bender assumed a new position as Chair with another University. This leaves the Construction Management program without a faculty member to cover several courses within the curriculum.

How and when the concern was identified:

Concern was identified in the Summer of 2014.

Actions taken or to be taken:

Starting Fall 2014 a search has begun to replace Bill Bender's position on the Construction Management faculty. The new faculty member will also share duties as the Chair of the Engineering Technologies, Safety and Construction department and faculty in Construction Management.

Review method and timeline:

The search began in the Summer of 2014 and the new Chair/Faculty member should be in place by Fall of 2015.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 2014 Name: David Carns

Description of concern:
There have been some recent ethical issues regarding students in the CMGT program. Copying homework, being disrespectful to faculty by using cell phones in class, etc.

How and when the concern was identified:
This has been an ongoing concern but most recently it seems to have become worse and needs to be addressed.

Actions taken or to be taken:
The faculty are in the process of refining a "code of conduct" for both students and faculty.

Review method and timeline:
This change will be implemented by Winter 2015 and reviewed as needed. A copy of the draft follows. This draft will be refined by the time it is implemented.

Time line..ideas...develop "standard"...review with IAC...introduce concepts in 265 sylubus present to students in CMGT 343 Estimating...via industry member and several faculty members

Goal is to have in place Winter 2015

One of the goals of the CWU CM program is to produce ethical and professional graduates for entry level management positions in the construction industry.

The student handbook reads:

Student Ethics and Conduct

Ethical conduct is an integral part of construction education and students in the Construction Management major are expected to take full personal responsibility to comply with those aspects of the profession that are applicable to students. Students are clearly expected to do their own work and not copy the work of others. The dignity of the classroom setting is important to learning. Students are expected to be seated prior to the beginning of class and to refrain from disruptive behavior during the class period. Smoking or use of other tobacco products is not permitted in the Hogue Technology Building at any time.

Also

A serious breach of ethical conduct may result in a student being dropped from the major

Blurb from a syllabus reads:

CLASSROOM BEHAVIOR:

1. Students are expected to be in their seats and ready to go to work by the scheduled start of class. (This is particularly important given the starting time of this course and the prevalence of quizzes at the start of class.) Normal rules of courtesy and respect will prevail during class periods.

2. Electronic devices (cell phones, digital readers & players, gaming devices, etc.) are to be off, inactive, or in a silent mode during class. Electronic devices may be used for taking notes and textbook access only – email, texting, game playing, web-surfing, video watching, or other similarly distracting activities are **NOT** permitted during class.

3. Work completed for this course (assignments, quizzes, and exams) is expected to be yours and yours alone. Unless otherwise specified, group solutions are not acceptable for any assignment, and neither is plagiarism of information from other sources or copying of another person's work. If detected, you will fail the assignment with no opportunity to make up the work. Your attention is directed to Appendix B of the current CWU Catalog for additional information regarding this topic.

4. Your attention is also directed to Appendix A of the current CWU Catalog for the University's policies regarding Equal Opportunity, Affirmative Action, Gender Equity, and Sexual Harassment matters.

AGC Code of Ethical Conduct

I believe that each of us, as individuals and organizations, owe our community, colleagues, customers and each other a duty and responsibility to conduct ourselves in an honest and ethical manner.

To further express my commitment to the Principles of Skill, Responsibility and Integrity, I pledge to conduct myself according to the following standards:

My word is my bond and is stronger than a written contract.

I will treat others as I desire and expect to be treated by them.

I will put safety and compliance with codes, laws and regulations above profit.

I will respect and protect the environment.

I will do my best to produce quality projects on time, at good value.

I will assume responsibility for my actions.

I will strive to reach accord through personal negotiations and do my best to resolve disputes quickly, with integrity, and without personal attack or rancor.

I will endeavor to persuade others within my organization and all for whom I am responsible to embrace these standards.

Adopted December 2000 by AGC of Washington's Board of Trustees.

Expectations of CM students

Professionalism

Electronic devices will be off during class/ lab

The faculty will address the students by their first name. Students will address the faculty by their title or rank ie Dr. Bender or Professor Bender

May bring drinks or light snacks to class but not lunch

Once the class has begun conversation between students should cease

Tobacco products…not in the classroom, bathrooms, study areas

Timeliness of work.. due at the beginning of class late work is not excepted…if you get sick…as you would at work give your professor notice

Copying others homework:

Expected to be you own

Can work in groups, can compare answers, we encourage this, but students should not blindly copy others work

Dishonesty during exams:

Cheating, copying, and prying eyes are considered a major breach and may result in loss of CM major status

Plagiarism

The CM faculty take a dim view of plagiarism. You may quote a line from another author but provide a reference.

See **CM Research Paper Format** available on blackboard for format and specifics on referencing others work

Expectations of CM Faculty

Be role models of students

Treat students with respect and fairness

Return work in a timely fashion

Prepared for class

Organized

If a book is required, research cost mitigation, use the book in class

Available during office hours and via appointment

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: Fall 2014 Name: David Carns

Description of concern:
The fundraising efforts of the program, while very effective, have not been consistent and not always well planned

How and when the concern was identified:
This concern was identified by Michoan Spoelstra, Development Officer for the College of Education and Professional Studies. The CMGT faculty members work closely with Michoan during and fund-raising events. The Fundraising and Engagement Plan is attached.

Actions taken or to be taken:
A "Construction Management Fundraising and Engagement Plan" was created in the summer of 2014. This plan details all the major fundraising efforts of the program (Reno appeal, Scholarship support, naming opportunities, Career Fair, Golf Tournament, etc.), and includes the dollar goals for each effort as well as dates, methods, etc.

Review method and timeline:
This change is currently being implemented and will be evaluated on a continuous basis.

Construction Management Fundraising and Engagement Plan

This document outlines and establishes goals for the CM program to develop funding and industry engagement. Plan will be reviewed each fall by the CEPS Development Officer, program faculty and the Industry Advisory Council to ensure program priorities are aligned.

Annual fund (telefunding, direct mail and/or online solicitations)

Reno Appeal: Total Goal $15,000

-Target Drop print/ Drop date by the end of November

~1,000 total mailing addresses (past corporate donors, attribute/CM newsletter)

- Export by 4 packages to direct giving and appeal letter – Multi use, Civil and Commercial

- Students/ teams participate in solicitation of gifts, sign letters.

-Identify corporate donors involved with coaching before appeals are mailed.

Scholarship and Program Support: Total Goal $5000

- Focus on building the general CMGT scholarship fund (annual funds and major gifts) and the CMGT program support fund

Naming opportunities in Hogue Technology:

-Carns/Calhoun naming: Total Goal $3,000

- Email appeal drop date: September

Event Fundraisers (any event where tickets or fees are collects)

ETSC Career Fair (Department goal): Total Goal $9,000

-Engagement opportunity for corporate supporters - Faculty help recruit corporate attendees, charitable portion goes back to the program (~5K direct to CMGT)

CMGT Golf Tournament: Total Goal $15,000

-Event date, July

-Target Drop date for invitation/reminders: Jan-March (Save the date), e-blast May, Phone calls May-July

-Goal: 144 participants, 10 holes sponsors, 2 tournament sponsors (See CM Golf Tournament Income Statement for annual recap)

Alumni Engagement (no charge to the guest/receipts)

Building Times Newsletter

~1,000 addresses alumni, friends, corporate donors, attribute/CM newsletter), mail list approx.

-Target Drop dates: XX and XX

Corporate guest speakers/Info Sessions

-Target date: Fall / winter/ spring quarter

-Company info sessions and technical presenter sessions

- Industry partner research opps, TBD one faculty/Industry research project annually

Events, publications, recruitment and guest speaking opportunities are designed to allow industry, alumni and donors to interact with the program in a meaningful way - as cultivation and as stewardship from and with the program and current students.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: Fall 2014 Name: David Carns

Description of concern:
The industry is moving away from printed contract documents, especially blueprints, and moving toward electronic plans/documents. There is a concern that the program maintains a status that is consistent with industry.

How and when the concern was identified:
Students indicate that they are using software such as Bluebeam during their internships. Also the Reno teams are using this software but it has not been taught in the CMGT courses to this point.

Actions taken or to be taken:
Bluebeam is now available and will be used in CMGT 265 for Fall quarter 2014 and in CMGT 343, Estimating, for Winter quarter 2015.

Review method and timeline:
This change is currently being implemented and will be evaluated at the end of Fall quarter 2014.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: May 2013 Name: David Carns

Description of concern:
The CMGT 245 (Light Commercial Construction) class was becoming quite large (up to 35 students) and difficult to manage. Also, some spring quarters the program was not able to obtain two reasonable construction projects form community members so all the students had to be placed on one project. This did not optimize the students' learning experience.

How and when the concern was identified:
This has been an ongoing concern.

Actions taken or to be taken:
Students in the CMGT program have an option of taking CMGT 245, CMGT 452, LEED, or IET 490, Cooperative Field Experience. Faculty advisors have, in the past year, been encouraging students to register for IET 490 over the summer months. This provides the students with a structured internship program and also provides a good learning experience. As a result CMGT 245 enrollment has dropped to about 20 students, a much more manageable number. This change should enhance the quality of that course.

Review method and timeline:
This change will be reviewed on an ongoing basis.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: Winter 2013 Name: Warren Plugge

Description of concern:

With CMGT 320 being offered in the Spring quarter, this does not align with the proper flow of classes into the curriculum.

How and when the concern was identified:

Concern was identified due to conflicts with student schedules in their senior year.

Actions taken or to be taken:

Move CMGT 320 from Spring to Winter quarter.

Review method and timeline:

CMGT 320 will be offered in Winter 2014 instead of Spring.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: September 1, 2012 Name: Warren Plugge

Description of concern:

Dave Carns and Bill Bender are scheduled to go on phased retirement starting Fall of 2012.

How and when the concern was identified:

Concern was identified in the Spring 2012.

Actions taken or to be taken:

Starting Fall 2012 Dave Carns will teach courses in the Fall and Winter quarters and Bill Bender will teach courses in the Winter and Spring quarters.

Review method and timeline:

With the additional faculty these changes have created a seamless transition between faculty members.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: September 1, 2012 Name: Warren Plugge

Description of concern:

Additional CMGT faculty.

How and when the concern was identified:

Not necessarily a concern, but with Dave Carns and Bill Bender taking half time phased retirement this has created a need for a new faculty member.

Actions taken or to be taken:

Starting September 1, 2012 Professor David Martin was hired to teach many of the commercial courses including Blueprint Reading, Scheduling, Estimating I and Estimating II for Commercial Construction and Concrete.

Review method and timeline:

David Martin has integrated very well with existing faculty and the students.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: February 28, 2013 Name: Dave Carns

Description of concern:

It has been difficult to evaluate potential projects (owners) for CMGT 245, Light Commercial Construction to find the best projects to "fit" with the course.

How and when the concern was identified:

This has been an ongoing concern. Some projects that have been submitted to the class over the years are not well suited for a variety of reasons. These reasons include: too far from campus, too large, too high, too complex, inadequate funding, no permit, etc.

Actions taken or to be taken:

Prior to this spring's class Mike Andler, the adjunct who is teaching the course, created an Excel matrix to evaluate potential projects. This year it's a trial run to see how the matrix will work out.

Review method and timeline:

This year's projects will be evaluated on the matrix. Next spring we'll take another look and see how the project(s) selected based on this scoring matrix worked. From there we may adjust the matrix and continue to use it to evaluate potential projects to assure that the ones we select provide the optimal learning opportunities for the students in the CMGT program.

CMGT 245 Project Selection

Central Washington University

Project Applicant Owner Name & Address

	1)Charles Pringle 604 N Anderson St. Eburg	2)Crystal Weddington	3) Paul Woodside 340 Valley View Eburg	4)Joe Powell 221 Cross Creek Dr. Eburg	5)	6)	7)	8)	9)	10)	
Project Location											
Less than 2 miles from CWU (25pts)	25										
2.1 to 5 miles from CWU (20pts)		20	20								
5.1 to 7 miles from CWU (15pts)											
7.1 to 10 miles from CWU (10pts)				10							
10.1 or more miles from CWU(5pts)											
Project Location Total (25pts possible)											
Total Size Square Footage											
Under 400 sq. feet (10 pts)											
401 - 600 sq. feet (7.5 pts)											
601 - 800 sq. feet (5 pts)				5							
801 or more sq. feet (2.5 pts)	2.5	2.5	2.5								
Total Size Square Footage (10 pts possible)											
Complexity of Wall Framing											
No windows/garage doors/man-doors (12pts)											
1-3 windows(max. 36"x36")/man-doors (10pts)				10							
4+windows(max. 36"x36")/man-doors (8pts)											
Windows larger than 36" x 36" (6pts)											
1-2 8'x12' garage doors (4pts)											
3+ 7'x12' garage doors or any larger size (2pts)	2		2								
Complexity of Wall Framing (12pts possible)											
Complexity of Roof Framing											
100% Truss/no hand-cut rafters (10pts)	10	10	10	10							
50% Truss/50% hand-cut rafters (5pts)											
1+ dormer(s) or irregular pitch (2.5 pts)											
100% hand-cut rafters (0 pts)											
Complexity of Roof Framing (10pts possible)											
Type of Structure											
Stick-frame on stemwall/footing (10pts)		10	10	10							
Living quarters/light commercial construction (10pts)											
Stick-frame on slab (6pts)											
Pole/Post-building (2pts)											
Concrete foundation already in place (2pts)	2										
Type of Structure (20pts possible)											
Wall height (bottom to top plate)											
Up to 10 feet (10pts)				10							
10.1 to 12 feet (5pts)											
Over 12 feet (2.5 pts)	2.5		2.5								
Wall height (bottom to top plate) (10pts possible)											

CMGT 245 Project Selection

Central Washington University

Project Applicant Owner Name & Address

	1)Charles Pringle 604 N Anderson St. Eburg	2)Crystal Weddington	3) Paul Woodside 340 Valley View Eburg	4)Joe Powell 221 Cross Creek Dr. Eburg	5)	6)	7)	8)	9)	10)	
Interior Room Framing											
0 Interior Rooms (10 pts)			10	10							
1-2 Interior Rooms (5pts)	5										
3+ Interior Rooms (2.5 pts)											
Any Living Space (-10 pts/Non-living +0)											
Interior Room Framing (10 pts possible)											
Roof Slope											
Gable (3:12, 4:12, 5:12) (10pts)			10	10							
Gable (6:12, 7:12, 8:12) (7.5 pts)											
Gable (9:12, 10:12, 11:12) (5 pts)											
Gable (12:12 or steeper) (2.5 pts)	2.5										
Hip (3:12, 4:12, 5:12) (10pts)											
Hip (6:12, 7:12, 8:12) (7.5pts)											
Hip (9:12, 10:12, 11:12) (5pts)											
Hip (12:12 or steeper) (2.5pts)											
Other Style or Slope (-5pts)											
Roof Slope (10pts possible)											
Roofing Material											
Composition (3-tab) (10 pts)	10										
Metal(5pts)			5	5							
Other (steel, cedar shakes, etc.) (0pts)											
Roof Material (10pts possible)											
Exterior Siding											
T-111 or 4'x8' Sheet Siding (10 pts)											
Horizontal Lap (8 pts)	8		8								
Vertical (5pts)				5							
Shake/Cedar Shingles (2.5)											
Hardie Plank/Similar Material (0pts)											
Exterior Siding (10pts possible)											
TOTAL (127 Total Points Possible)	69.5	42.5	80	85							

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: May 15, 2012 Name: Dave Carns

Description of concern:

The name of the department, Industrial and Engineering Technology, did not reflect the true nature of the programs in the department and does not contain any information about the largest program in the department, Construction Management.

How and when the concern was identified:

This concern/opportunity was identified in March of 2009 after the ACCE team visited campus on March 7-10. The issue is identified in "undeveloped potentials" in the Visiting Team Report.

Actions taken or to be taken:

The department name has been officially changed to the Department of **Engineering Technologies, Construction and Safety**, as of April 2012.

Review method and timeline:

This new department title should take care of the "undeveloped potential" identified in the ACCE Visiting Team Report, as it reflects the nature of the programs in the department and highlights the two prominent programs, Construction and Safety.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: November 15, 2012 Name: Warren Plugge

Description of concern:

Use of Microsoft Project is slowly being phased out from most companies. Owner demands have required contractors to use P6.

How and when the concern was identified:

Industry advisory board suggested changing from Microsoft Project to P6 during a industry advisory board meeting due to its usage across multiple projects and companies.

Actions taken or to be taken:

P6 is being used in place of Microsoft Project. This program has been added to all computers in our labs.

Review method and timeline:

Since this is the first year the program there were several bugs that have had to be worked out to make the program functional with the computers on campus and get it ready for student use. This is an issue with many programs used within the Construction Management program.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: May 8, 2012 Name: Dave Carns

Description of concern:

Not necessarily a concern but an opportunity to invite a guest speaker, who works for a contractor, to speak to the CMGT 460, Concrete Construction class, on the subject of managing a large concrete construction project.

How and when the concern was identified:

This concern/opportunity was identified in March of 2012 through the Construction Management Advisory Council. A contractor member of the council, Tom Cole, volunteered to review the course materials for CMGT 460 and suggested bringing in such a speaker.

Actions taken or to be taken:

On May 1, 2012, Amy Jenne, CWU CMGT alum and Vice President of Apollo, Inc., a heavy civil construction company based out of Kennewick, WA, spoke to the class on managing large concrete construction projects. She included many examples, including bridge construction, wastewater treatment plants and water treatment plants. She spoke about planning the project, forming the concrete, including how to select forming systems, placing the concrete etc. The presentation was very beneficial in the sense that it gave the students a great perspective into all the planning that goes into such a project.

Review method and timeline:

Students in CMGT 460 will be given the opportunity to provide feedback on the guest speakers in the class. In addition, either Ms. Jenne or another contractor will be invited back the next time the class is offered, in the spring of 2013.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: April 2012 Name: Dave Carns

Description of concern:

The SHM 323, Construction Safety, Class does not seem to be doing the job.

How and when the concern was identified:

This concern has been identified for some time (probably two years or more) through comments from the students and from performance on the AIC exam.

Actions taken or to be taken:

The SHM program hired a new tenure-track faculty member in the fall of 2011. This faculty member has a PhD in civil engineering and extensive experience in the commercial construction industry, working for Hoffman Construction in the Portland, Oregon area. This faculty member has been working with the CMGT program and is scheduled to teach SHM 323 beginning in the fall of 2012. The plan is to incorporate the OSHA 10 hour training into the course so that everyone who takes the course receives the 10-hour card.

Review method and timeline:

This will be reviewed after the end of fall quarter 2012 and each spring quarter as the CMGT students work their way through the revamped course and their knowledge is reflected by their scores on the national AIC exam.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 2011 Name: Dave Carns

Description of concern:

The industry seems to be moving away from MS Project as scheduling software. This is the software used for teaching in CMGT 447.

How and when the concern was identified:

This concern has been identified for some time (probably two years or more) through the Advisory Council, student responses on course reviews and informal feedback from alumni and industry representatives.

Actions taken or to be taken:

The CMGT 447 course was reviewed by the industry advisory council, including the use of MS Project. Feedback indicated that perhaps it would be best to change to P6, a Primavera product (now owned by Oracle Systems). Contact has been made with Primavera and CWU's computer services with the goal of having P6 ready to use in CMGT 447 by fall quarter 2011.

Review method and timeline:

This will be reviewed after the end of fall quarter 2011.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 8, 2010 Name: Dave Carns

Description of concern:

Current workload plans do not account for the heavy student advising load for CMGT faculty members.

How and when the concern was identified:

The ACCE team, when they visited campus in March of 2009, mentioned in the Visiting Team Report that the workload plans for CMGT faculty do not appear to adequately address the heavy student advising load.

Actions taken or to be taken:

In March of 2010 CMGT faculty submitted workload plans for the 2010/2011 academic year that increased the number of workload credits for student advising from 1.0 to 2.0.

Review method and timeline:

By fall 2010 CMGT faculty will either have a reduced workload for teaching or overload pay to compensate for the heavy advising load.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 8, 2010 Name: Dave Carns

Description of concern:
Attendance at the Industry Advisory Council meetings has been sporadic and some members have not been active.

How and when the concern was identified:
The ACCE team, when they visited campus in March of 2009, mentioned in the Visiting Team Report mentioned that there is an opportunity to increase industry support through a more active advisory council.

Actions taken or to be taken:
This concern has been alleviated with the recent reorganization and revitalization of the Construction Management Industry Advisory Council in the fall of 2009. Bylaws have been adopted, membership has been increased, committees have been created and meeting dates have been established. All council members have been assigned to a committee and given very meaningful roles to assist the program.

Membership: Twelve members, six of whom must be alumni
Committees: Each committee has been assigned a faculty coordinator and each committee has selected a chair from among its members.
1. Membership Committee
2. Events/Outreach Committee
3. Curriculum Review Committee
4. Scholarship Committee

The council will meet twice per year; the second Thursday of October in the Puget Sound area and the second Thursday of May on the CWU campus, with some students in attendance. These changes led to an increase in attendance, with 10 of the 12 members, plus the 4 CMGT faculty members and CEPS Development officer present at the October 2009 meeting.

Review method and timeline:

Review will be done on an ongoing basis.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 8, 2010 Name: Dave Carns

Description of concern:

There is an opportunity to increase the diversity of students in the CMGT program.

How and when the concern was identified:

The ACCE team, when they visited campus in March of 2009, mentioned in the Visiting Team Report mentioned that there is an opportunity to increase student diversity within the CMGT program.

Actions taken or to be taken:

The Advisory Council scholarship committee created a new Construction Management Scholarship, funded initially with $35,000 from the Advisory Council Foundation Account. The Committee will use these funds to award a $3000 scholarship to students (pre-majors) entering the program. The scholarship criteria gives a slight preference to women/minority students.

Review method and timeline:

The scholarship applications are due May 1, 2010 and the money will be awarded for the 2010/2011 academic year. Review will be done on an ongoing basis.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: December 7, 2010 Name: Dave Carns

Description of concern:

Building Information Modeling (BIM) is becoming very important to the construction industry and has not been properly incorporated into the CMGT curriculum.

How and when the concern was identified:

This concern has been identified for some time (probably two years or more) through the Advisory Council, student responses on course reviews and informal feedback from alumni and industry representatives.

Actions taken or to be taken:

The CMGT curriculum will be modified to include BIM. IET 161, CAD, is being changed beginning Winter quarter 2011 to include REVIT software and coverage of building information modeling. This is a required course and will involve student learning through "hands-on" software experience. Also, beginning in the spring of 2011 CMGT 485, Construction Accounting and Contemporary Topics will include an overview of BIM applications and guest speakers from industry to discuss their use of BIM.

Review method and timeline:

In the future thoughts include the integration of BIM into more CMGT courses. This will be reviewed on an ongoing basis.

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: March 31, 2009 Name: Warren Plugge

Description of concern:

CMGT 345, Heavy-Civil Estimating II, did not formally include coverage of construction ethics in the learner outcomes. This is also true of all CMGT courses that include coverage of construction ethics.

How and when the concern was identified:

The ACCE visiting team mentioned, when they were on campus in March, that it would be a good idea to identify the coverage of ethics in the syllabi and learner outcomes of all courses where ethics is included.

Actions taken or to be taken:

The coverage of ethics has been added to the syllabus and learner outcomes for this course

Review method and timeline:

By spring 2010 all CMGT courses that include ethics should have the coverage identified in the learner outcomes section of the syllabi

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: February 2, 2009 Name: William Bender

Description of concern:
Catalog was vague about elective for CMGT 452. Process required a substitution form to credit a student earning credit for CMGT 452.

Most students have an internship that could also allow them to earn college credit.

How and when the concern was identified:
Registrar/ degree check out required an additional form to account for students taking CMGT 452.

Some students have a difficult time completing course requirements in scheduled time and previous accreditation report suggested internships.

Actions taken or to be taken:
Catalog was changed to read:
IET 258 Spreadsheets
or
IT 268 Data Base
or
CMGT 452 LEED for Construction
or
IET 490 Cooperative Education

Review method and timeline:
AY 2010/11 review by CMGT faculty advisors

Report of Change

Program Assessment, Construction Management
Central Washington University

Date of report: December 14, 2009 Name: Dave Carns

Description of concern:
Scoring major applications, October 2009

How and when the concern was identified:

As applications for the major became more competitive this fall it was also more difficult to objectively evaluate work experience and the letter of application for each student.

Actions taken or to be taken:

After discussion with the other faculty members it was also evident that the number of points for work experience should be increased slightly and the number of points for the letter decreased slightly (new scoring sheet is attached). In addition a new form entitled "Detail of Work Experience" (attached) was created for each student to submit, along with a resume, will make it easier to evaluate the quality and length of each applicant's construction experience.

Also, the number of possible points for work experience was increased from 1.5 pts to 2.0 pts. and the number of possible points for the letter was reduced from 1.0 pts. to 0.5 pts., keeping the total possible number of points at 12.

Review method and timeline:

The new scoring method will be reviewed in October of 2010 when students next apply for the major.

Construction Management Major Application Score Sheet

Student Name: _____ Student ID: _____

Course	Credits	Score (grade)
MATH		
MATH		
ENG 101		
ENG 102		

Note: The math scores will be taken as the highest two grades in pre-calculus and calculus math classes.

Time to Completion of Degree	Possible Score	Score
Three years	0	
Two years plus fall and winter quarter	0.25	
Two years plus one fall quarter	1.25	
Two years	1.50	

Work Experience	Possible Score	Score
No experience	0.00	
One summer, not construction-related	0.25	
One summer construction-related experience, not with a construction company	0.75	
Two or more summers construction-related summer experience, not with a construction company	1.00	
One summer construction experience	1.25	
One summer construction experience plus one summer construction-related experience	1.50	
Two summers construction experience	1.75	
Six months or more continuous construction experience or three or more summers	2.00	

Letter	Possible Score	Score
No letter	0	
Unprofessional letter	0.10	
Three or more errors (unsigned, not dated, spelling/grammar)	0.20	
Two errors (unsigned, not dated, spelling/grammar)	0.30	
One error (unsigned, not dated, spelling/grammar) error	0.40	
Excellent letter with no grammar/spelling errors	0.50	

Course	Completed (grade) or In Progress
CMGT 265	
IT 101 or equivalent	

Comments:

Name of evaluator: _____

Construction Management Program
Detail of Work Experience

Include all relevant experience ***after*** high school graduation

Dates (include month and year). List most recent first	Company, location and type of work	Full-time or part time? Hours/week?	Duties and Responsibilities Supervised any employees?