

Construction Management Program Assessment Plan; IET Department

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 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.

		Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.					
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.
Goal B. Provide support for the construction industry.							

<p>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.</p>	<p>1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation.</p>	<p>Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.</p>	<p>Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs.</p> <p>Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>	<p>Yes or no; is the goal achieved?</p>	<p>Seminars, faculty</p>	<p>Annually</p>	<p>Seminars or programs are documented in a table. Goal is two seminars per year.</p>
<p>2. Place a minimum of 90% of graduates in responsible positions in the construction industry.</p>				<p>Graduating senior written survey.</p>	<p>Senior students</p>	<p>Spring quarter</p>	<p>Exit survey data (graduating seniors, each year). The placement rate, job titles and average starting salaries are</p>

							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.							

<p>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%.</p>	<p>1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation.</p> <p>2. Strengthen the preparedness of freshman and transfer students.</p> <p>4. Continuously improve physical educational environment.</p>	<p>Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.</p> <p>Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.</p>	<p>Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.</p> <p>Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs</p> <p>Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>	<p>AIC national exam</p>	<p>Senior Students</p>	<p>Spring quarter</p>	<p>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.</p>
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<p>2. Continue efforts underway by the Construction Management Advisory Council. These efforts include:</p> <ul style="list-style-type: none"> • Fund-raising with the ultimate goal of creating a Council budget that is self-sustaining. 				<p>The CMGT Advisory Council treasury reports</p>	<p>Industry and faculty</p>	<p>Fall quarter</p>	<p>The goal is to raise \$5000 per year.</p>
<ul style="list-style-type: none"> • Sponsoring annual alumni/contractor events. 				<p>Advisory Council records</p>	<p>Industry and faculty</p>	<p>Annually</p>	<p>Yes or no. This includes the golf tournament and events such as the cocktail hour or other alumni events. Attendance and dates are tabulated.</p>
<ul style="list-style-type: none"> • Conduct two meetings per year to provide advice on curriculum, program needs, etc. 				<p>Advisory Council meeting minutes</p>	<p>Industry and faculty</p>	<p>Annually</p>	<p>Minutes of each meeting are recorded, sent to council members and keep in a notebook. Goal is a minimum of two meetings per year.</p>

<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> 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.
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.

<p>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.</p>				<p>ASC records of participation</p>	<p>Junior and seniors students, faculty coaches and industry mentors</p>	<p>Annually, February</p>	<p>Yes or no. Goal is to compete in four categories.</p>
<p>4. Goal D. Support professional development for program faculty</p>							
<p>1. Send each faculty member to a minimum of one professional conference per year.</p>	<p>5. Continuously improve the cultural educational environment.</p>	<p>Goal 3 - Recruit and retain a diverse and highly qualified faculty to develop and sustain prominent programs.</p> <p>Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate</p>	<p>Goal VI: Build inclusive and diverse campus communities that promote intellectual inquiry and encourage civility, mutual respect, and cooperation.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>	<p>Records of attendance</p>	<p>Faculty</p>	<p>Annually</p>	<p>Attendance is documented and tabulated. Goal is a minimum of one conference per year per faculty member.</p>

		resources to ensure the highest levels of academic and professional development.					
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.
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	1. To nurture excellent programs in Technology,	Goal 4 - Build mutually beneficial partnerships	Goal I: Maintain and strengthen an outstanding academic and	Foundation account records	Foundation/faculty/industry	Spring 2008	Document earnings and how the earnings are utilized to improve

<p>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.</p>	<p>and Engineering Technology related disciplines by maintaining or obtaining national accreditation.</p> <p>2. Strengthen the preparedness of freshman and transfer students.</p> <p>4. Continuously improve physical educational environment.</p>	<p>with alumni, industry, professional groups, institutions, and the communities surrounding our campus locations.</p>	<p>student life on the Ellensburg campus.</p> <p>Goal III: Strengthen and further diversify our funding base and strengthen infrastructure to support academic and student programs</p> <p>Goal IV: Build mutually beneficial partnerships with the public sector, industry, professional groups, institutions, and the communities surrounding our campuses.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>				<p>the heavy/civil option.</p>
<p>2. With assistance from the Advisory Council, offer the new course, CMGT 443, Utility Construction, by</p>				<p>Industry review</p>	<p>Course/faculty/i</p>	<p>Spring 2008</p>	<p>Yes or no.</p>

spring quarter 2008.				of course	ndustry		
3. Develop a highway materials/asphalt lab, in conjunction with CMGT 461, the highway materials and design course, by spring quarter 2008.				Industry review of lab exercises	Course/faculty/industry	Spring 2008	Yes or no. Lab exercises will be documented in the syllabus for the course.

ASSESSING STUDENT LEARNING OUTCOMES FOR THE CONSTRUCTION MANAGEMENT PROGRAM

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	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.				

			economy and environment.					
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					CMGT 444/445 Exams	Seniors	Fall	80%

80% accuracy.								
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								

<p>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.</p>					<p>CMGT 265 Exam questions</p> <p>CMGT 460/461, average of exam 1</p>	<p>Sophomores</p> <p>Seniors</p>	<p>Fall or Winter</p> <p>Spring</p>	<p>75%</p> <p>75%</p>
<p>4. Students shall demonstrate knowledge in the areas of structural mechanics, including statics and strength of materials with 80% accuracy.</p>					<p>IET 311 Exam, Find reactions for a beam</p>	<p>Juniors</p>	<p>Fall or Winter</p>	<p>80%</p>
<p>5. Students shall demonstrate an</p>					<p>CMGT 320, Assignment</p>			

<p>understanding of, electrical and mechanical systems with 80% accuracy.</p>					<p>to calculate the electrical load for a house</p> <p>CMGT 442, Assignment to calculate the heat load for a building</p>	<p>Juniors/seniors</p> <p>Juniors/Seniors</p>	<p>Winter</p> <p>Spring</p>	<p>80%</p> <p>80%</p>
<p>6. Students shall demonstrate knowledge of soil mechanics and foundation types and principles of design with 80% accuracy.</p>					<p>CMGT 450, Assignment to calculate the bearing capacity of a shallow foundation</p>	<p>Seniors</p>	<p>Fall</p>	<p>80%</p>
<p>7. Students shall demonstrate a working knowledge of construction cost accounting, financing,</p>					<p>AIC Exam section; Budgeting, Costs and Cost</p>	<p>Seniors</p>	<p>Spring</p>	<p>70%</p>

<p>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.</p>					<p>Control, overall scores of CMGT seniors</p>			
<p>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.</p>					<p>AIC Exam section; Construction Safety, overall scores of CMGT seniors</p> <p>SHM 323 Final exam, average scores</p>	<p>Seniors</p> <p>Juniors</p>	<p>Spring</p> <p>Fall</p>	<p>70%</p> <p>70%</p>

<p>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</p>					<p>AIC Exam section; Management Concepts, overall scores of CMGT seniors</p>	<p>Seniors</p>	<p>Spring</p>	<p>70%</p>
<p>10. Students shall be able to demonstrate knowledge of proper project planning, including staffing and equipment and material usage with 80%</p>					<p>CMGT 455/456 Project</p>	<p>Seniors</p>	<p>Spring</p>	<p>80%</p>

accuracy.								
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					Average scores of CMGT 265	Sophomores	Fall or Winter	80%

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.					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					CMGT 265 Assignment or exam	Sophomores	Fall/Winter	80%

<p>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.</p>								
<p>3. Skills/Doing</p>								
<p>A. Graduates shall be able to estimate, plan and schedule a small commercial/reside</p>	<p>Goal A. Improve the quality of instruction in</p>	<p>1. To nurture excellent programs in Technology, and Engineering</p>	<p>Goal 1 - Provide for an outstanding academic and professional growth</p>	<p>Goal I: Maintain and strengthen an outstanding academic and student life</p>				

<p>ntial or heavy/civil project using microcomputers and appropriate software.</p>	<p>the program.</p>	<p>Technology related disciplines by maintaining or obtaining national accreditation in the following programs.</p> <p>5. Continuously improve the cultural educational environment.</p>	<p>experience for students at all CWU locations.</p> <p>Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.</p>	<p>on the Ellensburg campus.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>				
<p>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</p>					<p>CMGT 343 Final project scores</p>	<p>Juniors</p>	<p>Winter</p>	<p>90%</p>

utilizing Microsoft Excel, with a success rate of 90%.								
<p>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</p>					<p>CMGT 344/345 Final Project</p>	<p>Juniors</p>	<p>Spring</p>	<p>90%</p>

<p>shall be able to estimate and bid a heavy/civil project using appropriate software, with an accuracy rate of 90%.</p>								
<p>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%.</p>					<p>AIC Exam section; Planning, Scheduling and Control, overall score of CMGT seniors</p> <p>CMGT 447 Final project average score</p>	<p>Seniors</p> <p>Seniors</p>	<p>Spring</p> <p>Fall</p>	<p>70%</p> <p>70%</p>

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					CMGT 450, Overall average lab scores	Seniors	Fall	80%

tests on construction materials, including concrete, and soils with 80% accuracy.					CMGT 460/461, Slump and cylinder tests, overall average lab report scores	Seniors	Spring	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%
C. Students graduating from the program shall be	Goal A. Improve the quality of	1. To nurture excellent programs in	Goal 1 - Provide for an outstanding academic and	Goal I: Maintain and strengthen an outstanding				

<p>able to communicate clearly and effectively, orally, graphically and in writing.</p>	<p>instruction in the program.</p>	<p>Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.</p> <p>5. Continuously improve the cultural educational environment.</p>	<p>professional growth experience for students at all CWU locations.</p> <p>Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.</p>	<p>academic and student life on the Ellensburg campus.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>				
<p>1. Students shall be able to effectively prepare and present a technical oral report on various construction topics, with 80% success</p>					<p>CMGT 346/347 Student presentation average scores</p>	<p>Juniors</p>	<p>Winter</p>	<p>80%</p>
<p>2. Students demonstrate the ability to make</p>					<p>CMGT 485 Student presentation</p>	<p>Seniors</p>	<p>Spring</p>	<p>80%</p>

business and professional oral presentations, with 80% success.					average scores			
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					CMGT 265 Sketching and drawing assignments, average scores	Sophomores	Fall/Winter	80%

views and detail views, with 80% accuracy.								
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,					AIC Exam section; Communication Skills on written skills, overall score of CMGT	Seniors	Spring	70%

and daily job reports that include proper grammar, spelling and sentence structure, with a 70% success rate.					seniors			
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