WSU Five-Year Program Review
Self-Study

Department/Program: Parson Construction Management Technology (CMT) Program

Semester Submitted: Fall 2012

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A. Brief Introductory Statement

The Parson Construction Management Technology (CMT) program is accredited by American Council for Construction Education (ACCE). In 2010 ACCE renewed the program's accreditation for an additional six years. In 2016-2017 the program will need to seek reaccreditation. Although ACCE requires programs to set and measure outcomes, their accreditation is based primarily upon a program meeting the minimum number of credit hours in each of the required topics. ACCE is looking at moving to outcomes; however, the earliest that this will happen will be in 2018-2019 school year. When the Parson CMT program seeks reaccreditation from ACCE we will still be under the existing standard, rather than outcomes. More information on ACCE can be found at: http://www.acce-hq.org/

In order to graduate, our students must take and score a 192 of 300 on the Associate Constructor (AC) Level 1 exam given by the American Institute of Constructors (AIC) and the Constructor Certification Commission. "The AC (Associate Constructor) certification is intended for constructors entering the construction field and exam questions will be primarily based upon education knowledge."[1] This exam provides an independent measure of our program outcomes that can be compared nationally. Historically, the Parson CMT program has done very well on the exam. The average for the spring 2012 test was 230.83 compared to a national average of 210.59, with 210 being a passing score; one of our students received the high score in the nation (274 of 300); and 6 of 23 (26%) students scored in the top 10 percentile. More information on the AC exam can be found at: http://www.professionalconstructor.org/Home/.

During the 2012-2013 school year, the Parson CMT program will complete a review of their curriculum and seek to make changes to the curriculum to address weaknesses identified by ACCE and to strengthen the curriculum.

The Parson CMT program consists of a degree with two emphases, Construction Management and Facilities Management. This report will focus on the Construction Management emphasis because the Facilities Management is still under development and has yet to have a graduate.

The program teaches both upper- and lower-division course at the Ogden campus and upper-division courses at Salt Lake Community College's Redwood Campus. The program has an articulation agreement with SLCC's Architecture Technology Department where they provide the lower-division courses.

The program is scheduled to move to the Davis campus in the fall of 2013 when the new building is complete.

[1] http://www.professionalconstructor.org/Home/

B. Mission Statement

Prepare the next generation of leaders for the Utah construction industry by providing a practical and leading-edge educational experience.

C. Curriculum

Curriculum Map

Core Courses in Department/Program	Department/Program Learning Outcomes									
	Communication Skills	Engineering Concepts	Management Concepts	Materials, Methods, and Plan Reading	Bidding and Estimating	Budgeting, Costs, and Cost Control	Planning, Scheduling, and Control	Construction Safety	Surveying and Project Layout	Project Administration
CMT 1100-Construction Management Orientation			L*							L
CMT 1150-Construction Graphics				H						
CMT 1210-Residential Materials and Methods				H						
CMT 1310-Commercial Materials and Methods				H						
CMT 1500-Computer Applications in Construction				M	M		M			
CMT 2220-Construction Contracts and Specifications										H
CMT 2330-Concrete Technology		M		M						
CMT 2340-Construction Surveying		H							H	
CMT 2360-Building Codes and Inspections	M									M
CMT 2640-Architectural Estimating					H					
CMT 2880-Internship	M		L*							L
CMT 3115-Construction Cost Estimating	L		L*		H					
CMT 3130-Construction Planning and Scheduling							H			M
CMT 3210-Construction Management	M		H*							H
CMT 3260-Mechanical and Electrical Systems		H								
CMT 3350-Applied Structures		H								
CMT 4120-Construction Accounting and Finance						H				M
CMT 4150-Construction Equipment and Methods					H	M				

Core Courses in Department/Program	Department/Program Learning Outcomes									
	Communication Skills	Engineering Concepts	Management Concepts	Materials, Methods, and Plan Reading	Bidding and Estimating	Budgeting, Costs, and Cost Control	Planning, Scheduling, and Control	Construction Safety	Surveying and Project Layout	Project Administration
CMT 4350-Design of Construction Systems		H		L						
CMT 4550-Construction Safety			L*					H		
CMT 4610-Senior Experience			H		L	L	L			H
CMT 4620-Senior Project	H				H	H	H	M		H
CMT 4890-Practicum	M		L*							M
MATH 1080-Pre-calculus		H								
PHYS 2010-College Physics I		M								
GEO 1060-Environmental Geoscience		M								
BTNY 1403-Environment Appreciation		M								
COMM 2110-Principles of Public Speaking or COMM 1020-Interpersonal/Small Group Communications	H									
ACTG 2010-Survey of Financial Acct I			H			M				
ECON 2010-Microeconomics			H							
BSAD 3200-Legal Environment of Business			H							
MGMT 3010-Organizational Behavior and Management			H							
Business Elective			H							
Business Elective			H							
Business Elective			H							

H = High, M = Medium, L = Low

*Includes Ethics

D. Student Learning Outcomes and Assessment

Measureable Learning Outcomes

At the end of their studies at WSU, students in this program will:

1. **Communication Skills:** Demonstrate effective verbal and written communication skills.
2. **Engineering Concepts:** Apply the principles of engineering, science, and math to solve practical construction problems.
3. **Management Concepts:** Apply the principles of accounting and business management to the construction industry.
4. **Materials, Methods, and Plan Reading:** Evaluate construction materials, methods, and equipment and demonstrate the ability to interpret contract and design documents.
5. **Bidding and Estimating:** Estimate construction quantities and apply costs to prepare bid proposals for construction projects.
6. **Budgeting, Costs, and Cost Control:** Apply the principles of accounting to project management, including budgeting and controlling costs.
7. **Planning, Scheduling, and Control:** Apply the principles of scheduling to construction projects, including activity selection and sequencing, duration calculation, and the development of a scheduling model.
8. **Construction Safety:** Identify the OSHA standards that apply to the construction industry and develop a safety management plan.
9. **Surveying and Project Layout:** Apply the principles of math to solve surveying problems and demonstrate the proper use of surveying equipment in construction layout.
10. **Project Administration:** Apply the principles of project management to construction projects, including site layout, contract administration, quality control, conflict resolution, and record keeping.

Evidence of Learning: Program Outcomes

Measurable Learning Outcome **Students will…**	**Method of Measurement** **Direct and Indirect Measures***	**Findings Linked to Learning Outcomes** (NOTE: The number in red indicate averages below the minimum acceptable)	**Interpretation of Findings**	**Action Plan/Use of Results**
Communication Skills: Demonstrate effective verbal and written communication skills.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Communication Skills Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 10.00 National Average: 9.57 Max Possible: 16 Min Acceptable: 11 Spring School's Average: 23.30 National Average: 20.62 Max Possible: 30 Min Acceptable: 21	Students failed to meet the minimum acceptable score for communication skills during the fall exam. This was due to one student scoring a 1 of 16 in this category because he ran out of time. Because the sample size was small (9 students) one student's performance quickly brought us below passing. This student retook the test in the spring and received a passing score on the communication portion of the test. In the spring, the students successfully demonstrated communication skills.	We will continue to monitor this as a potential weakness in the program.

Engineering Concepts: Apply the principles of engineering, science, and math to solve practical construction problems.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Engineering Concepts Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 20.22 National Average: 18.81 Max Possible: 27 Min Acceptable: 19 Spring School's Average: 21.61 National Average: 20.25 Max Possible: 29 Min Acceptable: 20	Students successfully demonstrated engineering concepts.	No curricular or pedagogical changes needed at this time.
Management Concepts: Apply the principles of accounting and business management to the construction industry.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Management Concepts Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 9.78 National Average: 9.26 Max Possible: 12 Min Acceptable: 8 Spring School's Average: 27.78 National Average: 25.83 Max Possible: 36 Min Acceptable: 25	Students successfully demonstrated management concepts.	No curricular or pedagogical changes needed at this time.
Materials, Methods, and Plan Reading: Evaluate construction materials, methods, and equipment and demonstrate the ability to interpret contract and design documents.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Materials, Methods, and Plan Reading Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 22.78 National Average: 20.24 Max Possible: 30 Min Acceptable: 21 Spring School's Average: 23.70 National Average: 21.42 Max Possible: 32 Min Acceptable: 22	Students successfully demonstrated materials, methods, and plan reading.	No curricular or pedagogical changes needed at this time.

Bidding and Estimating: Estimate construction quantities and apply costs to prepare bid proposals for construction projects.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Bidding and Estimating Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 38.56 National Average: 35.15 Max Possible: 51 Min Acceptable: 36 Spring School's Average: 32.65 National Average: 29.86 Max Possible: 43 Min Acceptable: 30	Students successfully demonstrated bidding and estimating.	No curricular or pedagogical changes needed at this time.
Budgeting, Costs, and Cost Control: Apply the principles of accounting to project management, including budgeting and controlling costs.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Budgeting, Costs, and Cost Controls Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 24.56 National Average: 22.26 Max Possible: 31 Min Acceptable: 22 Spring School's Average: 21.04 National Average: 19.31 Max Possible: 27 Min Acceptable: 19	Students successfully demonstrated budgeting, costs, and cost control.	No curricular or pedagogical changes needed at this time.
Planning, Scheduling, and Control: Apply the principles of scheduling to construction projects, including activity selection and sequencing, duration calculation, and the development of a scheduling model.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Planning, Scheduling, and Control Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 38.00 National Average: 35.94 Max Possible: 50 Min Acceptable: 35 Spring School's Average: 37.13 National Average: 34.24 Max Possible: 47 Min Acceptable: 33	Students successfully demonstrated planning, scheduling, and control.	No curricular or pedagogical changes needed at this time.

Construction Safety: Identify the OSHA standards that apply to the construction industry and develop a safety management plan.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Planning, Scheduling, and Control Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 16.56 National Average: 15.45 Max Possible: 21 Min Acceptable: 15 Spring School's Average: 14.00 National Average: 13.05 Max Possible: 18 Min Acceptable: 13	Students successfully demonstrated construction safety.	No curricular or pedagogical changes needed at this time.
Surveying and Project Layout: Apply the principles of math to solve surveying problems and demonstrate the proper use of surveying equipment in construction layout.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Surveying and Project Layout Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 4.89 National Average: 4.28 Max Possible: 6 Min Acceptable: 4 Spring School's Average: 5.35 National Average: 5.02 Max Possible: 7 Min Acceptable: 5	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.
Project Administration: Apply the principles of project management to construction projects, including site layout, contract administration, quality control, conflict resolution, and record keeping.	AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals– Project Administration Section. The program's goal is to be above both the national average and the minimum acceptable in this area.	Fall School's Average: 43.11 National Average: 39.30 Max Possible: 56 Min Acceptable: 39 Spring School's Average: 24.26 National Average: 20.95 Max Possible: 31 Min Acceptable: 22	Students successfully demonstrated project administration.	No curricular or pedagogical changes needed at this time.

Although the above outcomes indicate that we are doing well as a program, when we make a comparison between the Ogden and the SLCC campuses we find that there is a significant difference in the success of the students.

In 2012 we analyzed the data from the spring 2012 AIC Constructor Certification Commission CQE Level 1 (AC) exam. This is an exam that we give to all of our graduating seniors. It is a program requirement that students get a 192 of 300 to graduate from the program. To pass the exam and get their certification from the AIC Constructor Certification Commission students must score a 210. The data was looked at in two ways: based upon where the students took senior project, Ogden campus versus SLCC, and based upon where they completed their lower-division work, Weber versus SLCC's Building Construction/Construction Management (BCCM) program.

We concluded the following from the data:

Pass Rate: The pass rate for students who took their lower-division courses from SLCC's BCCM program was 67% (4 of 6) compared to 87% (13 of 15) for students who took their lower-division courses from Weber. This is not a surprise, but verifies what we have been hearing from students and faculty; that students from the BCCM[2] program were not prepared for the upper division courses.

Student Ratios: SLCC provided 6 of 22 (27%) of the students taking senior project spring 2012 semester and 14 of 58 (24%) for the year 2011-2012 year. SLCC provides about one quarter of our graduates even though the Salt Lake County is twice the size of the Ogden and Davis counties combined. SLCC continues to underperform as a feeder institution to the Parson CMT program.

Problem Areas: There are problems in both the lower-division (BCCM program) and upper-division at SLCC. Some of the problems in the upper-division can be attributed to preparation of the students coming out of the BCCM program, but it cannot all be attributed to the lower-division work. Estimating and bidding is a major area of weakness, which starts with the BCCM program. This estimating issue is not a surprise because it has been a major complaint from students and faculty.

We have addressed the problems in the lower-division courses by canceling the articulation agreement with the BCCM program. To address the problems in the upper-division, we need to hire a strong faculty that can teach most of the upper-division courses, provide leadership for the SLCC program, and has the energy to make the program a success. Based upon the low enrollments in the SLCC program, availability of fund, and the difficulty in finding a faculty of this caliber, it is unlikely

[2] After a review of the BCCM's faculty and seeking input from students and faculty, the articulation agreement between the Parson CMT program and SLCC's BCCM program was canceled at the end of the spring 2012 semester. The Parson CMT program maintains an articulation agreement with SLCC's Architecture Technology Department.

that we will be able to do this. We need to look at consolidating the courses taught at SLCC with the courses taught at Weber when the program moves to Davis in the fall of 2013.

In the spring of 2012 we gave our graduating seniors the Collegiate Learning Assessment (CLA) exam as part of a university-wide assessment program. The CLA is used to measure higher order skills including critical thinking, analytic reasoning, problem solving, and written communication.

Students who take the exam are assigned one of two problems types: performance task (PT) or analytic writing task (ESS).

For the performance tasks, the students are given a real-world task to complete, such as writing a memo or establishing a policy based upon a number of documents. The problems are graded based upon:

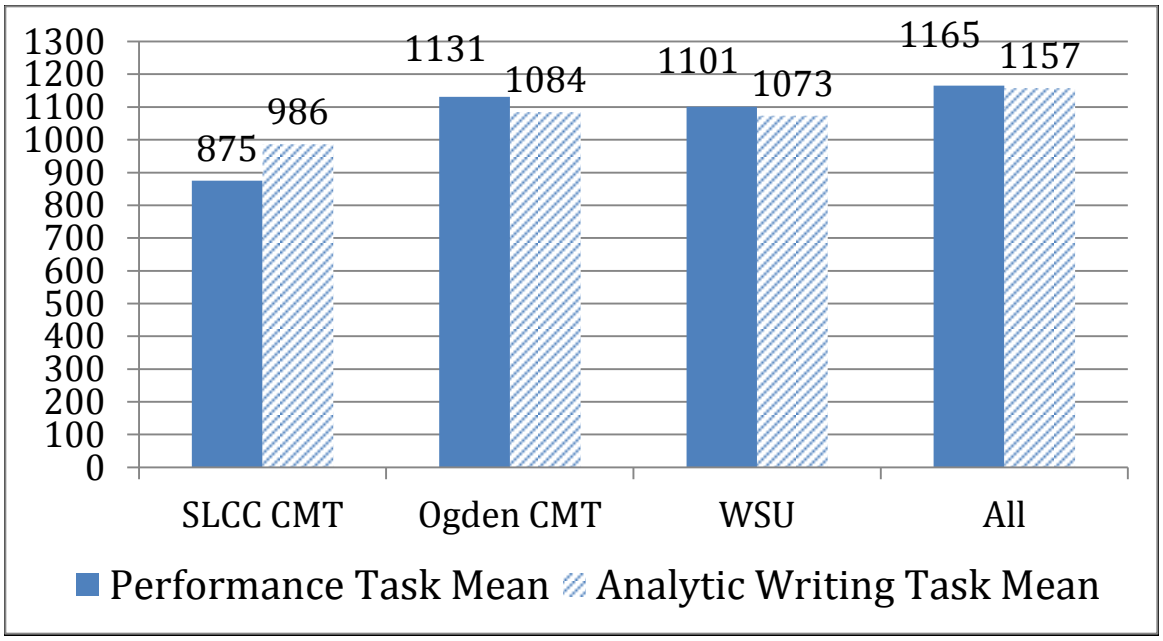
- Analytic reasoning and evaluation
- Writing effectiveness
- Writing mechanics
- Problem solving

For the analytic writing task, the students are asked to make an argument on a given issue or are asked to critique an argument assessing the soundness of the argument. The analytic writing tasks are graded based upon:

- Analytic reasoning and evaluation
- Writing effectiveness
- Writing mechanics

The averages for both the construction management students at the SLCC and the Ogden campus, all of the students from Weber State taking the exam, and for all students taking the exam are given in the following table and graph.

	SLCC CMT	Ogden CMT	WSU	All
Performance Task Mean	875	1131	1101	1165
Analytic Writing Task Mean	986	1084	1073	1157



In both areas, the average for the students at the Ogden campus was slightly above the average for Weber State (although not statically significant), but below the national average. The average for the students at the SLCC campus was well below the other three averages. In the PT area, the average for the students at the SLCC campus was below the low for the students at the Ogden campus.

This data mirrors what we saw on the AC exam. Student at the SLCC campus have a lower level of performance than students at the Ogden campus.

Evidence of Learning: General Education Courses

The Parson CMT program does not teach any general education courses.

Evidence of Learning: Courses within the Major

Evidence of Learning: Courses within the Major **CMT 2340 – Construction Surveying**					
Measurable Learning Outcome Students will…	Method of Measurement Direct and Indirect Measures*	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Engineering Concepts: Apply the principles of engineering, science, and math to solve practical construction problems. Students will… Apply the principles of math to solve surveying problems.	Midterm 1	Half of the students will score above 180.	High 200 Low 115 Average 178 Median 185	Students successfully demonstrated engineering concepts.	No curricular or pedagogical changes needed at this time.
	Midterm 2	Half of the students will score above 160.	High 195 Low 120 Average 162 Median 170	Students successfully demonstrated engineering concepts.	No curricular or pedagogical changes needed at this time.
	Midterm 3	Half of the students will score above 160.	High 200 Low 110 Average 164 Median 165	Students successfully demonstrated engineering concepts.	No curricular or pedagogical changes needed at this time.
Surveying and Project Layout: Apply the principles of math to solve surveying problems and demonstrate the proper use of surveying equipment in construction layout. Students will… Apply the principles of math to solve surveying problems.	Midterm 1	Half of the students will score above 180.	High 200 Low 115 Average 178 Median 185	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.
	Midterm 2	Half of the students will score above 160.	High 195 Low 120 Average 162 Median 170	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.
	Midterm 3	Half of the students will score above 160.	High 200 Low 110 Average 164 Median 165	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.

Evidence of Learning: Courses within the Major **CMT 2340 – Construction Surveying**					
Measurable Learning Outcome Students will…	Method of Measurement Direct and Indirect Measures*	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Surveying and Project Layout: Apply the principles of math to solve surveying problems and demonstrate the proper use of surveying equipment in construction layout. Students will… Demonstrate the proper use of surveying equipment in construction layout.	Field Assignment 4 Estimating the Height of a Building	Have one or less of the groups fail to meet the required tolerances.	Allowable error +/- 0.40 feet 4 of 5 groups fell with in the range	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.
	Field Assignment 5 Elevation Difference Using a Level	Have one or less of the groups fail to meet the required tolerances.	Allowable error +/- 0.01 feet on closure and 0.02 feet on elevation. 2 of 5 groups met the tolerances.	Students did not successfully demonstrate surveying and project layout on this assignment.	The assignment will be revised to provide intermediate feedback. A revised version of this assignment was tested during the summer semester and 4 of 4 groups meet the required tolerances. The revised lab will be used in future classes.
	Field Assignment 6	Have one or less of the groups fail to meet the required tolerances.		This is not measurable.	This assignment will no longer be used in the assessment.
	Field Assignment 8 Building Layout using a Theodolite	Have one or less of the groups fail to meet the required tolerances.	Allow error +/- 0.01 feet on all sides. 4 of 5 groups met the tolerances.	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.
	Field Assignment 10 Curve Layout	Have one or less of the groups fail to meet the required tolerances.	Allow error +/- 0.01 feet on all points. 5 of 5 groups met the tolerances.	Students successfully demonstrated surveying and project layout.	No curricular or pedagogical changes needed at this time.

Note: In spring of 2012 we began measuring course outcomes so that data is quite limited.

Evidence of Learning: High Impact or Service Learning

We teach the following high impact courses: CMT 2880 Internship, CMT 4620 Senior Project, and CMT 4890 Practicum. We have not measured any outcomes for these courses.

E. Academic Advising

Advising Strategy and Process

The Department of Construction Management has a written policy governing advising. This policy covers the following topics:

- Advising assignments
- Procedures for waiving courses
- Current and past articulation agreement along with expiration dates
- Waiving of prerequisites
- The student's responsibilities regarding advising
- The program's philosophy regarding the scheduling of classes
- Requirements for departmental honors
- Procedures for documenting student advising
- Recommended course sequencing for SLCC students

Students are encouraged to meet with an advisor at the beginning of their freshman and junior years.

The advising is divided between the Parson CMT Program Coordinator (Chris Soelberg) and the Department Chair (Steven Peterson). The advising is divided as follows:

Program Coordinator:

- All students seeking a B.S. Degree in Construction Management – Construction Management Emphasis, except SLCC students.

Department Chair:

- All SLCC students.
- All students seeking a B.S. Degree in Construction Management Technology – Facilities Management Emphasis.
- All students seeking a BIS, a second bachelor's degree in either emphasis, or a minor in construction management.
- All students who want to receive Departmental Honors must meet with the Department Chair in addition to their regular advisor.

The Department Chair works with the SLCC advisors to ensure that the advising is consistent and accurate. The written policy has been shared with these advisors.

If and when there are enough students at SLCC, the department hopes to assign a coordinator at SLCC to handle the advising.

When the facilities management program has enough students to be a standalone program, the Facilities Management Program Coordinator will handle the advising.

Effectiveness of Advising

No data has been collected regarding the effectiveness of advising.

Past Changes and Future Recommendations

Through discussion with advisors and the students, the program needs to identify the most common mistakes students make when scheduling their classes and provide tips on how to avoid these mistakes. The program also needs to encourage students to come in for advising at the beginning of their senior year.

F. Faculty

Faculty Demographic Information

The department has five full-time faculty, which includes one tenured, full professor; one tenured, associate professor; two tenure-track, assistant professors[3]; and one instructor. The instructor is assigned to the facilities management emphasis. The remaining four faculty teach primarily in the construction management emphasis. The program also uses a number of adjunct faculty. We used ten adjunct faculty for spring 2012 semester and six for fall 2012 semester.

As of August 2011, we had a sixth faculty who was primarily responsible for providing leadership and teaching the upper-division courses at SLCC. He resigned in August 2011 and has not been replaced, due to budget constraints and declining enrollments.

Programmatic/Departmental Teaching Standards

The Department Chair meets with all full-time faculty at the beginning of fall semester to set goals for teaching, scholarship, and services for the year. The faculty then report their accomplishments to the chair at the end of spring semester.

All courses taught by tenure-track and adjunct faculty are evaluated by the students. For tenured faculty, one course each semester (fall and spring) is evaluated by the students. The evaluations include both a numeric rating (on a

[3] In 2012, one of the tenure-track, assistant professors failed to make adequate progress towards tenure.

scale of 1 to 4) and comments to open ended questions. The evaluations are provided to the faculty at the completion of the semester. For tenured and tenure-track faculty, the numeric ratings from these evaluations are placed in their professional file; which are kept in the Dean's office.

All tenure-track faculty are reviewed by the Department Chair each year, except for the years that they are formally reviewed for progress towards tenure or tenure. The results of these reviews are placed in the faculty's professional file.

Faculty Qualifications

Tenure-track faculty are required to have a minimum of five-years full-time experience in the construction industry and a master's degree in construction management or a related field. Instructors and adjunct facility are required to have a minimum of five-years full-time experience in the construction industry and a bachelor's degree in construction management or a related field.

Evidence of Effective Instruction

i. Regular Faculty

The evidence of effective learning consists of the student evaluation and the formal peer reviews that are performed as part of the promotion and tenure process. Both of these are maintained in the faculty's professional file.

We are in the process of implementing course outcomes to measure the success of course instruction. Approximately 25% of the courses will be measured each year. The data from the course outcomes assessment will be used to measure the effectiveness of the course and help instructors improve the courses.

ii. Adjunct Faculty

The evidence of effective learning consists of the student evaluation. Copies of these are maintained in the Department's office.

Once course outcomes have been implemented by the regular faculty, we will look at implementing outcomes for adjunct faculty.

Mentoring Activities

Currently we have assigned a mentor to the faculty who failed to make satisfactory performance towards tenure, in addition to the Department Chair working with this faculty. We encourage faculty to seek mentors outside the department.

The Department Chair offers training to the department's faculty in the promotion and tenure process, measuring outcomes, and other university related issues.

With 60% of our faculty being instructors or tenure-track faculty with less than six years teaching, it is hard to provide adequate mentoring.

Diversity of Faculty

The faculty includes four male and one female, all Caucasian. As we hire new faculty, we will actively recruit female and minority faculty.

Ongoing Review and Professional Development

The college and the Department Chair support the faculty attending one major conference per year, with the college covering the transportation cost and the department covering the seminar costs.

Additionally, the Department Chair sends all of the faculty to the ASC Region 6 Student competitions where the faculty spends time interacting with their peers from other construction management programs and one day in presentations related to teaching in construction management programs.

The Department Chair supports the faculty continuing their professional development by attending local training provided by the Associated General Contractors of America (AGC), Associated Builders and Contractors, Inc. (ABC), the Utah Mechanical Contractors Association (UMCA), etc.

The Department Chair supports faculty attending free training provided by the Teaching, Learning, and Assessment Forum and other university sponsored training.

G. Support Staff, Administration, Facilities, Equipment, and Library

Adequacy of Staff

The Parson CMT Program is housed in the Department of Construction Management. The department has one three-quarter-time secretary and one work-study student. The level of support staff is adequate for our needs.

i. Ongoing Staff Development

Staff members have access to free training through the campus "Learn" program. Training is available for Weber State Specific information (Facilities Management, People Tracker, ePar, WSU Cash Handling); Personal/Professional Development (Personal Finance,

Franklin Covey series); Computer/Technology Skills (Writing for the Web, Intro to Chi Tester, etc.); and, Health and Wellness (Yoga, Pilates, etc.). All staff and faculty also have the option of taking up to six credits a semester free of charge.

Adequacy of Administrative Support

The Dean has been very supportive of the program and department. The program has worked with the Dean to establish our own awards/graduation ceremony.

The Department receives $3,000 per year from the college to cover non-labor operations costs and $700 per year from the college to cover accreditation fees. Of this $2,328 is taken back by the university to cover telephone equipment charges, $2,500 is paid to ACCE for accreditation fees, and $550 is paid for dues to the Associated Schools of Construction (ASC) leaving the Department with a $1,678 deficit. The Department covers this deficit, long distance phone charges, copies, office supplies, seminars, mileage, travel to accreditation meetings, and so forth from donations from industry. If it were not for donations from industry we would not have sufficient funding to cover operational costs and accreditation fees.

Adequacy of Facilities and Equipment

Currently the department has four dedicated offices, two dedicated classrooms, and a dedicated lab for concrete testing. The fifth faculty is housed in the Department of Engineering Technology, which is located on the same floor of the same building as the department. This separation of the offices makes it hard for the faculty to interact.

In the fall of 2013, we anticipate that the program will move to the new building being constructed on the Davis campus. The Department will have dedicated office space, six class-rooms that will be shared with other programs when not being used by the Department, a dedicated senior project room, and a dedicated concrete testing lab. The office space will include 14 offices, space for four adjunct instructors, a secretarial station, and a storage/work room.

Once we move to the Davis campus the facilities will be adequate.

Adequacy of Library Resources

The Stewart Library houses numerous books, journals, media holdings and electronic journals. All students, including distance education students may access the WSU Stewart Library from any location via the Internet. Students may access any number of electronic databases in this manner. In addition, students may request interlibrary loan options from this website. The library has a

dedicated librarian for the College of Applied Science and Technology. The holdings and services of the library are more than adequate for the Parson CMT program.

H. Relationships with External Communities

Description of Role in External Communities

The Construction Management Advisory Committee meets formally twice a year, in fall and spring. Industry advisors, CMT faculty, the Department Chair, and the Dean of our college attend the committee meetings. The proceedings are headed by an industry elected individual. This committee has been extremely active the past several years. We typically rely on this committee to give us advice and suggestions on curriculum changes, course content, scholarships, department funding, employment strategies, etc. In the past this committee has been very helpful in obtaining support and backing for this program in forms of donations and scholarships.

Summary of External Advisory Committee Minutes

The following is a summary of the Construction Management Advisory Committee meeting held on March 28, 2012:

- Kelly Stackaruck talked about fundraising opportunities including the upcoming CMT Golf Tournament (June 4, 2012) and naming opportunities at the new Davis campus building. We are trying to generate a $1 million endowment for student activities and faculty enhancement (training and development).
- Steven Peterson (Department Chair) discussed accreditation including:
    - ACCE will require us to submit an additional report next year addressing our weaknesses.
    - ACCE's move to outcomes based assessment.
    - Northwest accreditation requirements.
    - Program accreditation by the Utah State Board of Regents.
- Steven Peterson discussed articulation with SLCC including:
    - Students coming out of the BCCM program are unprepared. The advisory board noted that we have had problems with the BCCM program not teaching to our standard for a long time and that if they were unwilling to address the issues we should cancel the articulation agreement.
    - Enrolments are low at SLCC and do not justify the CMT program's presence. WSU Continuing Education is willing to help fund the continuation of CMT classes at SLCC for a year to give SLCC time to address the enrollment problem. During the next year we will look at the feasibility of continuing classes at SLCC.
- Status of the new building on the Davis campus.

- Ryan Beck, a CMT student, gave a report about his experience at the annual ASC student competition and the CM Challenge in the fall at BYU.
- Upcoming graduation celebration (April 13, 2012)
- The next Construction Management Advisory Committee meeting will be in November 2012.

I. Results of Previous Program Reviews

This is the first time the Parson CMT program has done this review, so there are no results of previous program reviews.

J. Action Plan for Ongoing Assessment Based on Current Self Study Findings

Action Plan for Evidence of Learning Related Findings

Problem Identified	Action to Be Taken
Issue 1—Curriculum Review Complete the curriculum review and seek to make changes to the curriculum to address weaknesses identified by ACCE and to strengthen the curriculum.	Current 5 Year Program Review: None
	Year 1 Action to Be Taken: Submit curriculum change.
	Year 2 Action to Be Taken: None
	Year 3 Action to Be Taken: None
	Year 4 Action to Be Taken: None
Issue 2—Program Outcomes Establish program outcomes for the CMT course used for the Construction Management Technology Degree—Construction Management emphasis and begin measuring the outcomes.	Current 5 Year Program Review: None
	Year 1 Action to Be Taken: Finalize course outcomes. Have the faculty practice measuring outcomes for at least one course per semester to experience measuring outcomes.
	Year 2 Action to Be Taken: Measure outcomes for 25% of the courses. Review outcomes to see if any revisions need to be made.
	Year 3 Action to Be Taken: Measure outcomes for 25% of the courses. Review outcomes to see if any revisions need to be made.
	Year 4 Action to Be Taken: Measure outcomes for 25% of the courses. Review outcomes to see if any revisions need to be made.

Issue 3—Upper-Division Course at SLCC Either improve the quality of the instruction in the upper-division courses taught at SLCC or combine all upper division courses at the Davis campus when the new building opens. NOTE: Hiring a lead faculty for SLCC is dependent on funding from the college or continuing education. The discontinuance of the upper division course at SLCC is dependent on approval from the Dean and continuing education.	Current 5 Year Program Review: None
	Year 1 Action to Be Taken: Monitor and decide if a continued presence is warranted. Formulate an action plan for years 2 through 4.
	Year 2 Action to Be Taken: To be determined
	Year 3 Action to Be Taken: To be determined
	Year 4 Action to Be Taken: To be determined
Issue 4—Advising Improve advising	Current 5 Year Program Review: None
	Year 1 Action to Be Taken: Identify most common scheduling problems. Prepare and disseminate and advising brochure with scheduling tips. Encourage students to come in for advising at the beginning of their senior year.
	Year 2 Action to Be Taken: Monitor and make changes as needed.
	Year 3 Action to Be Taken: Monitor and make changes as needed.
	Year 4 Action to Be Taken: Monitor and make changes as needed.

Action Plan for Staff, Administration, or Budgetary Findings

Problem Identified	Action to Be Taken
Issue 1 Funding of Department Operations and Accreditation Fees	Current 5 Year Program Review: Seek additional funding from the Dean of COAST
	Year 1 Action to Be Taken:
	Year 2 Action to Be Taken:
	Year 3 Action to Be Taken:
	Year 4 Action to Be Taken:

K. Summary of Artifact Collection Procedure

Artifact	Learning Outcome Measured	When/How Collected?	Where Stored?
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Communication Skills:** Demonstrate effective verbal and written communication skills.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Engineering Concepts:** Apply the principles of engineering, science, and math to solve practical construction problems.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Management Concepts:** Apply the principles of accounting and business management to the construction industry.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Materials, Methods, and Plan Reading:** Evaluate construction materials, methods, and equipment and demonstrate the ability to interpret contract and design documents.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Bidding and Estimating:** Estimate construction quantities and apply costs to prepare bid proposals for construction projects.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Budgeting, Costs, and Cost Control:** Apply the principles of accounting to project management, including budgeting and controlling costs.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices

AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Planning, Scheduling, and Control:** Apply the principles of scheduling to construction projects, including activity selection and sequencing, duration calculation, and the development of a scheduling model.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Construction Safety:** Identify the OSHA standards that apply to the construction industry and develop a safety management plan.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Surveying and Project Layout:** Apply the principles of math to solve surveying problems and demonstrate the proper use of surveying equipment in construction layout.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices
AIC Constructor Certification Commission CQE Level 1 - Construction Fundamentals (National Exam)	**Project Administration:** Apply the principles of project management to construction projects, including site layout, contract administration, quality control, conflict resolution, and record keeping.	Last semester of senior year. Exam is given in the spring and the fall.	CMT Offices

APPENDICES

Appendix A: Student and Faculty Statistical Summary

	2007-08	2008-09	2009-10	2010-11	2011-12
Student Credit Hours Total					
Construction Management Tech	3,758	4,109	3,917	3,868	3,565
Student FTE Total	**125.27**	**136.97**	**130.57**	**128.93**	**118.83**
Student Majors					
Construction Management Tech	296	282	295	291	227
Program Graduates					
Associate Degree	4	2	2	1	2
Bachelor Degree	49	50	42	69	64
Student Demographic Profile	296	282	295	291	227
Female	10	14	13	9	11
Male	286	268	282	282	216
Faculty FTE Total	**6.433**	**8.08**	**7.32**	**8.51**	**NA**
Adjunct FTE	2.93	3.98	2.72	2.6	NA
Contract FTE	3.503	4.1	4.6	5.91	NA
Student/Faculty Ratio	**35.76**	**33.41**	**28.38**	**21.82**	**NA**

Data provide by Institutional Research

Notes:

1. Student Credit Hours Total represents the total department-related credit hours for all students per academic year. Includes only students reported in Banner system as registered for credit at the time of data downloads.
2. Student FTE Total is the Student Credit Hours Total divided by 30.
3. Student Majors is a snapshot taken from self-report data by students in their Banner profile as of the third week of the Fall term for the academic year.

4. Program Graduates includes only those students who completed all graduation requirements by end of Spring semester for the academic year of interest. Students who do not meet this requirement are included in the academic year in which all requirements are met. Summer is the first term in each academic year.
5. Student Demographic Profile is data retrieved from the Banner system.
6. Faculty FTE is the aggregate of contract and adjunct instructors during the fiscal year. Contract FTE includes instructional-related services done by "salaried" employees as part of their contractual commitments. Adjunct FTE includes instructional-related wages that are considered temporary or part-time basis. Adjunct wages include services provided at the Davis campus, along with on-line and Continuing Education courses.
7. Student/Faculty Ratio is the Student FTE Total divided by the Faculty FTE Total.

Appendix B: Contract/Adjunct Faculty Profile

Name	Gender	Ethnicity	Rank	Tenure Status	Highest Degree	Years of Teaching	Areas of Expertise
Steven Peterson	M	Caucasian	Professor	Tenured	MBA	12	Financial management of construction companies
Chris Soelberg	M	Caucasian	Associate Professor	Tenured	MPA	8	Mechanical, Safety, Commercial Materials and Methods, Internship, Construction Graphics, Contracts and Specifications.
Joseph Wolfe	M	Caucasian	Assistant Professor	Tenure track	MBA	5	Program/ Project Management
Kristen Park	F	Caucasian	Assistant Professor	Tenure track	MS Construction Management	3	Project Management
Pete Van der Have	M	Caucasian	Instructor	Non-tenure track	BS	2	Facilities management and organizational leadership

Name	Gender	Ethnicity	Rank	Tenure Status	Highest Degree	Years of Teaching	Areas of Expertise
Doug Bedingfield	M	Caucasian	Adjunct	Non-tenure track	BS	12	Concrete Mix Design and Testing
Matt Brower	M	Caucasian	Adjunct	Non-tenure track	BS	<1	Estimating
Eric Stratford	M	Caucasian	Adjunct	Non-tenure track	BS	<1	Project Management
David Tate	M	Caucasian	Adjunct	Non-tenure track	Certified Safety Trainer	12	Safety
Dan Wall	M	Caucasian	Adjunct	Non-tenure track	BS	10	Project Management
Doug Weseman	M	Caucasian	Adjunct	Non-tenure track	BS	1	Structural Design
Tim Willard	M	Caucasian	Adjunct	Non-tenure track	MS Civil Engineering	4	Structural Design
George Williams	M	Caucasian	Adjunct	Non-tenure track	BS	4	Building Codes

Appendix C: Staff Profile

Name	Gender	Ethnicity	Job Title	Years of Employment	Areas of Expertise
Andrea Stuart	F	Caucasian	Secretary II	0	Administrative support

Appendix D: Financial Analysis Summary

Cost	2007-08	2008-09	2009-10	2010-11	2011-12
Direct Instructional Expenditures	368,034	408,114	437,768	503,960	503,613
Cost Per Student FTE	2,938	2,980	3,353	3,909	4,238

Funding	07-08	08-09	09-10	10-11	11-12
Appropriated Fund	358,300	402,339	430,976	493,900	488,847
Other:	0	0	0	0	0
Special Legislative Appropriation	0	0	0	0	0
Grants of Contracts	0	0	0	0	0
Special Fees/Differential Tuition	9,734	5,775	6,793	10,060	14,766
Total	368,034	408,114	437,768	503,960	503,613

FTE	125.27	136.97	130.57	128.93	118.83

Data provided by Provost's Office

Appendix E: External Community Involvement Names and Organizations

Name	Organization
Chris Soelberg	American Society of Professional Estimators (ASPE)
Chris Soelberg	Associated Builders and Contractors, Inc. (ABC)
Chris Soelberg	Associated General Contractors of America (AGC)
Chris Soelberg	National Association of Home Builders (NAHB)
Chris Soelberg	Utah Mechanical Contractors Association (UMCA)
Kristen Park	Women in Construction

Appendix F: External Community Involvement Financial Contributions

The following include donations for 2007 to 2012

Organization	Amount	Type
A-Core Concrete Cutting Inc	620.00	Donation
Adams and Smith Inc	210.00	Donation
AGC of America	5,720.00	Donation
Ahern Rentals Incorporated	305.00	Donation
Ames Construction Inc	10,750.00	Donation
Associated Builders & Contractors of Utah, Inc.	4,200.00	Donation
Big D Construction Corporation	11,900.00	Donation
Cache Valley Electric Co.	3,280.00	Donation
Cache Valley Electric Co. - Logan	24,680.40	Donation
CFMA Utah Chapter	7,500.00	Donation
CL Martineau Homes	420.00	Donation
Claude H Nix Construction	360.00	Donation
Creative Times Construction	840.00	Donation
Dunkin & Bush, Inc	450.00	Donation
Elkhorn Construction, Inc.	150.00	Donation
Flatiron Construction Corp	1,300.00	Donation
Gramoll Construction Company	1,400.00	Donation
Granite Construction Company	5,230.00	Donation
Green Construction	3,440.00	Donation
HHI Corporation	600.00	Donation
Holcim Incorporated	5,460.00	Donation
Hughes General Contractors Inc	4,800.00	Donation
Jacobsen Construction Co Inc	8,720.00	Donation
James & Norma Kier Charitable Foundation	9,717.16	Donation
John White and Associates, Inc.	100.00	Donation
Johnson Controls Inc	840.00	Donation
K K Mechanical	150.00	Donation
Kiewit Pacific Co.	1,500.00	Donation
Kiewit Western Co	150.00	Donation
Kimball Equipment Company	420.00	Donation
Kozco Mechanical Inc	3,100.00	Donation
Law Office of Strong & Hanni	420.00	Donation
Layton Construction Company	2,580.00	Donation
Lynn Woodward Electric LLC	350.00	Donation
Mechanical Contracting Foundation Inc	3,370.73	Donation
MHTN Architects IncMPID	420.00	Donation
Mountain States Fence Company Inc	105.00	Donation
Northern Acoustics & Drywall Inc	210.00	Donation
Northern Wasatch Home Builders	3,000.00	Donation

Organization	Amount	Type
Northwest Cascade Inc	200.00	Donation
Okland Construction Company Inc	1,690.00	Donation
R & O Construction Company	3,070.00	Donation
Ralph L Wadsworth Construction Company Inc	300.00	Donation
Reliable Plumbing & Heating Inc	420.00	Donation
Ritchie Bros Auctioneers (America) Inc.	200.00	Donation
Ron J Peterson Construction	200.00	Donation
Salt Lake City Commuter Rail Constructors	6,540.00	Donation
Skanska USA Inc	1,500.00	Donation
SOS Staffing	16,940.30	Donation
Spindler Construction Corp	600.00	Donation
Stacy and Witbeck Inc	6,980.00	Donation
Staker Parson Companies	108,220.00	Donation
Stoney Brook Cottages, LLC	500.00	Donation
Sturgeon Electric	150.00	Donation
Sun State Equipment	420.00	Donation
The Kier Companies	1,720.00	Donation
TIC Holdings Inc	150.00	Donation
Utah Mechanical Contractors Association	3,120.00	Donation
Utah Mechanical Contractors Association MPID	4,052.57	Donation
Utah State Bar	1,000.00	Donation
VO Brothers Mechanical	420.00	Donation
Wadman Corporation	14,440.00	Donation
Wadman Foundation	44,320.00	Donation
Wasatch Electric	2,630.00	Donation
WW Clyde Companies	150.00	Donation
Xerox Corporation	305.00	Donation
Total	349,006.16	