

# **CONSTRUCTION MANAGEMENT TECHNOLOGY**

## **ASSESSMENT & QUALITY IMPROVEMENT PLAN**

Fall 2019



## **Construction Management Technology: Origins and History**

State Fair Community College received permission from Missouri's Coordinating Board of Higher Education (MoCBHE) to offer a degree in Construction Technology June 24, 2002. The events leading up to the permission for this new degree follow.

Since the early 1970s State Fair Community College has offered an AAS degree in Building Materials Merchandising. The degree is still offered. A number of SFCC's most successful alumni have this degree. In the 70s and early 80s this degree had total enrollment of between 30 and 40 students. Enrollment declined in the late 80s and into the 1990s. In 1996 the program was targeted for revitalization. Campus and community committees were formed and a number of alternatives were discussed.

In 1994, Missouri's legislature approved the A+ initiative. This legislation waives tuition for students who have gone to A+ qualified Missouri high schools. To qualify as an A+ school, the high school must have an A+ coordinator and meet a number of other guidelines. The student must remain drug free, do community service and maintain a 2.5 GPA.

When the A+ initiative became established, SFCC started to see students coming to SFCC for 2 years, majoring in Building Materials Merchandising and then going to the University of Central Missouri (UCM) and completing a Bachelor's degree in construction management.

The decision was made in late 1999 to "revitalize" the AAS in Building Materials Merchandising degree by adding an AAS degree in Construction Technology. This would allow more than one AAS program to place students in a basic core of classes. For example both the Building Materials Merchandising and the Construction Technology curriculum would include the Materials and Methods classes. Adding the AAS in Construction Technology also seemed the correct thing to do because there were already A+ students moving through SFCC to UCM. The construction technology degree allowed a better fit for those A+ students with transfer goals.

Curriculum development began and occurred throughout 2000; in 2001 a number of the current courses went before the SFCC curriculum committee. 2001 was also the first year the construction advisory committee met. This committee made a number of recommendations concerning courses and course content. One of the members, Dr. Jack Landers recommended the curriculum be structured around ACCE guidelines from the beginning. (The curriculum was developed this way and in October of 2002, SFCC was granted candidate status with ACCE.) Application to MoCBHE, for an AAS degree in Construction Technology, was made in the fall of 2001 and, as noted at the beginning of this section, MoCBHE approved SFCC's request in June of 2002.

The ACCE visiting team reported on the construction program in November of 2006. The American Council for Construction Education granted SFCC an initial accreditation on March 2<sup>nd</sup>, 2007. The next Self-Study deadline was extended and due June 1<sup>st</sup>, 2012 per a request made by Dr. Drennon on behalf of Program Coordinator Steve Harris, being on medical leave. An informal visit by Mr. Carl Roegner of ACCE was made on November 5, 2012 and the results of

the visit were reported to the Board at the ACCE mid-year meeting in February 2013. A delay in the re-accreditation visit due to unplanned leadership turnover was granted by ACCE in February 2013. A visiting team reported on the program in the Fall of 2013 and ACCE granted a 3 year accreditation.

The leadership of the program changed soon after the fall visit. At the next Advisory meeting it was suggested that the Program name might be changed to better reflect the skills taught. The name of the Program was changed to "Construction Management Technology". This allows prospective students and industry to better understand it.

The next visiting team reported on the program in the fall 2016 and ACCE granted a 6 year accreditation.

Other Construction Management Technology milestones have included the program's first graduating class in the spring of 2004. The fall of 2004 saw 38 new students majoring in construction at SFCC and the spring semester of 2005 has seen the addition of adjunct instructors required to cover multiple sections of courses required by the large number of freshman. The 2013 fall semester brought new construction classes and adjunct instructors to the LOZ campus. This was followed in the spring 2014 the appointment of Richard Vanderweide as program coordinator. The 2014 fall semester brought a new learning management system, Blackboard, to State Fair Community College. This allowed all Construction courses to be rebuilt based on each course being computer assisted via the LMS. It allows electronic posting of syllabi, grades, assignments, projects, tests and announcements with a goal of consistency between multiple sections of the same course. This also allowed for consistence between different Instructors, locations, and an on-ground or online format.

### **Construction Technology: Mission**

State Fair Community College Construction Technology Mission: *Our mission is to provide the highest quality construction education possible and maintain a strong commitment to serving students, community and the construction industry.*

### **Construction Technology: Goals**

- Education coursework that is current, challenging and rewards the student with basic construction industry knowledge that can used to be a productive employee
- Coordinate courses with other institutions that offer higher level construction management degrees, giving the students the opportunity to continue their education
- Maintain a good working relationship with the regional construction industry to facilitate placement and keep curriculum current
- Support students by developing construction related scholarships
- Challenge the construction faculty to continue building their construction related knowledge of construction
- Market the program to potential students and to potential employers
- Develop and maintain a continual program improvement program that involves students, faculty, administration, graduates and employers.

## **Construction Technology: Organizational Structure**

Jodi Fudge is the division chair of Applied Science and Technology. Richard Vanderweide is the Program Coordinator of Construction Management Technology. Marcie Teter and David Bechtold are the current adjunct instructors, teaching construction related coursework.

Organization at the course level is accomplished by making each course computer assisted (via a learning management system, or LMS). This allows electronic posting of syllabi, grades, assignments, projects, tests and announcements with a goal of consistency between multiple sections of the same course. This also allowed for consistence between different Instructors, locations, and an on-ground or online format. This allows us to fulfill our goal is consistency between multiple sections of the same course.

### **Goals**

**Goal 1: Offer construction education coursework that is current, challenging and rewards the student with basic construction industry knowledge that can used to be a productive employee.**

Near term objective: The adoption and use of quality textbooks for each construction course.

Measurement: Instructor, student and employer feedback and input from advisory committee.

Near term objective: The utilization of Blackboard electronic teaching platform for every construction class. This will allow linking to current articles and websites, and improve course organization. Utilizing Blackboard will also provide consistency between sections of the same course.

Measurement: Master courses have been created by the program coordinator. These courses can be imported into various instructors' construction courses to be used for instruction. All construction courses are scheduled as hybrids, a combination of a typical face-to-face lecture and an online course, forcing the students to become familiar with Blackboard and forcing construction instructors to use it as a teaching tool. Many of the construction courses are also offered in an online format. By using Blackboard as the sharing and teaching tool for curriculum, every student will receive an equal experience. All students take the same online assessments. Their grades will reflect the success of the instructional material in every format and with different instructors. Each course will be evaluated by comparing the average class score on the final test. We can also look at other averages in the class to improve individual parts of the course work. The Base line scores were set in the 2014–2015 school year. At this time, the construction department offers hybrid day classes on the Sedalia campus and selected courses are Zoomed to the LOZ campus and others as requested .

The current course rotation is set for all students to spend their final semester of four core construction hybrid classes on the Sedalia campus.

**Goal 2: Offer construction education coursework by multiple methods to be better suited to all students.**

Near term objective: Add and promote an online option to the construction curriculum. We believe there are nontraditional students that would benefit from these offerings that would allow the completion of the degree in a timely manner.

Measurement: Observe the number of enrolled students in online classes. Base the success of the online options by comparing online students to hybrid students (based on grades). Review student survey feedback and ratings of online courses.

Long term objective: Incorporate the use of a construction lab into the Materials and Methods classes.

Measurement: SFCC's Career and Technical Center (CTC) and the Construction Technology departments could make a collaborative effort to share space and promote student interaction between the CTC's construction trade school and the Construction Technology majors, including sharing the CTC's construction lab. The program coordinators from both areas are working towards this collaboration with the hopes of shared small projects and material demonstrations in the future.

**Goal 2: Coordinate our courses with other institutions that offer higher level construction management degrees so the students can choose to continue their education**

Near term objective: An extensive coordination meeting with Missouri State University program representatives needs to occur in order to better coordinate articulation between the two programs. Coordination with the University of Central Missouri's Construction department will be maintained to continue articulation between the two programs.

Measurement: Published documents explaining the expanded articulation between the two programs.

Long term objective: Maintain the ACCE accreditation, followed by articulation meetings with other schools, specifically, Kansas State, Missouri State, Southeast Missouri State.

Measurement: Published documents explaining the expanded articulation between the two programs.

**Goal 3: Maintain a good working relationship with the regional construction industry to facilitate placement and keep curriculum current**

Near and long term objective: Uphold continual improvement of the advisory committee process and growth of the committee in size and variety.

Measurement: The documentation of formal and informal advisory committee meetings and minutes.

Long term objective: Establish a working relationship with Homebuilders and/or General Contractor Associations.

Measurement: Documented student and faculty involvement with these groups.

**Goal 4: Support students by developing construction related scholarships**

Near term objective: Encourage State Fair Community College to increase the number of departmental scholarships available. Encourage local construction business to supply scholarships as part of their own recruiting process.

Measurement: An increase in the number of available scholarships available for construction.

Long term objective: Become more involved with the Home Builders Association and the Association of General Contractors. Learn more about their scholarship possibilities and apply them to the program.

Measurement: Documented increased involvement with these groups and an increase in the number of students applying for these scholarships.

**Goal 5: Challenge the construction faculty to continue building their construction related knowledge**

Near term objective: Send faculty to regional and national shows and association meetings. We would like to see the opportunity to attend ACCE meetings extended to other faculty.

Measurement: Documentation of meeting attendance and continued activity of faculty in various industry related activities. Faculty (in addition to the program coordinator) attending ACCE meetings.

**Goal 6: Market the program to potential students and to potential employers**

Near term objective: Make sure the program has a solid web presence on the SFCC website, because many students get their first glance at a construction program on the web.

Measurement: Documentation of the website and its improvements.

Near term objective: Be active when SFCC hosts the Skills USA (high school) regional event. This brings a number of potential students to campus.

Measurement: Documentation of participation. State Fair Community College continues to host the event.

Long term objective: Establish and maintain a working relationship with employers that will consider 2 year graduates. We hope to encourage employer's visits to this campus.

Measurement: Documentation of campus visits by a number of employers receptive to 2 year graduates.

Near term objective: Recruit students through college and career fairs with SFCC's recruiter. Continue to distribute program fliers at these events.

Measurement: Documentation of participation. Increase of student enrollment in the construction program.

**Goal 7: Develop and maintain a continual program improvement program that involves students, faculty, administration, graduates and employers**

Near term objective: Develop a simple plan that involves the faculty, student learning, advisory committee, employers, graduates, and can produce information that can be used for improving the course material and keeping it current. This will follow the direction set for the college with the AQIP initiative.

# ASSESSMENT & Quality Improvement Plan Results

## Fall 2019

The changes in the Construction Management Technology Program started with appointment of a new coordinator in the spring of 2014 and the college moving to the Blackboard Learning Management System in the fall of 2014. With these changes, all curriculum was recreated and improved.

This is the Third yearly assessment of the classes, comparing course sections. The program, as required by ACCE that all classes would have an overall assessment each year including only the program students. The first year information includes all student's information and is being used to set as part of the 2-year average. The goal of the program has been set at a class average of 84% and will be reviewed by the advisory board in the spring. Meeting this goal only means that the course will not require further action at that time. If a course does not meet the goal further action to improve the course will be taken.

From this year on we have decided to assess all of the Construction (CNST) courses, including the Engineering Design Technology (EDT) course Print Reading for Construction, in a three-year rotation. Using the students overall score for the class the sections will be compared. If the change is plus or minus 2% it can be attributable to differences in the groups of students.

Assessment & Quality Improvement Plan Results															
	F 201420	S 201430	F 201520	S 201530	F 201620	S 201630	S 201720	F 201730	Program change	S 201820	F201830	2017-2018 2-year avg	2016-2017 2-year avg	2015-2016 2-year avg	
Students	All	All	CNST	CNST	CNST	CNST	CNST	CNST		CNST	CNST	CNST	CNST	CNST	
EDT 105 (cadd)	88.2		88.9		82.7	90.4	77	95		93.8	92.6	89.5	86.3	87.3	
CNST 101 N/A	95.5	90.2	76.1	95.8	84.5	91.4	88.5	97.3		n/a	n/a		90.4	87	
CNST 105									CNST 105	93.8		93.7			
CNST 103 N/A		80.4-84.5	87.6-95.8	87.1		90.4-94.3		90.9-98		n/a	n/a		93.4	91.4	
CNST 106		90		No Class		90.4		88.3			82.7	85.5	89.3	90.4	
CNST 113	81.5		83.4		82.2		93.4			86.9		90.2	87.8	82.8	
CNST 138		95		No Class		92.5		87			86.8	86.9	89.7	92.5	
CNST 142		78.4	82.8		86.9		95			92		93.5	90.9	84.8	
CNST 148	73.4		82.4		87.1		88			94		91	87.6	85	
CNST 150									CNST 150	92		92			
CNST 160		89.7		No Class		90		88.7			89	90.8	89.4	90	
CNST 162	80.1/83.5	74.2-79.7	79.6-91.1	89.4-95.6	83.9-94.6	89-87.5	86.7-97	87-83		94.5-91	86.3-88.7	90.13	90.3	88.2	
	86.6			83.4											
		81		87.8		88.7		91.8			90.1				

(For additional information please contact the Program Coordinator)

This year the program is assessing CNST 105, CNST 160 and CNST 150. All three of these class averages are above our goal of 84% and no additional review is required. Given the low averages in some other courses we will look into those classes before the spring courses begin.

The Advisory Board has been active over the last year. It was the leader in suggesting that the program should follow the advice of the ACCE visiting team to combine CNST 101 & 103 into one class CNST 105 and create Building Layout and Surveying course CNST150.

The board has also given guidance for the type of scheduling software used locally, the need for lab space and the need for growth in student numbers at both locations. Also they supported the need for reaccreditation with ACCE.



The program has created a very easy to understand course rotation and several online courses to help working or out of town students. This rotation also allows a student to enter the program in either the fall or spring semester.

All class Syllabi now have Learning Outcomes listed and most of the students have been successful in achieving the goals set forth. One problem that had been found was “late work”. It seemed to be a problem across all of the courses. In talking with students we found that due to the large number of working and non-traditional students that attend our class, most of them worked many long hours to provide for their families. Most assignments were due on Sunday nights. By giving assignments out 10 days before the due date, it has given the flexibility of two weekends to complete assignments. Have due dates set in this manor has greatly reduced the amount of “Late Work” and improved the quality of the work.

We are currently working to include more interactive assignments in the course work and have noted a fair increase in class score averages.