

**Unit Strategic Plan**  
**Construction and Building Science Technology**  
**Department**  
**2017- 2019**

**Name of Program/Department:**

**Construction and Building Science Technology (CBST)**

**Mission Statement (for the program or department):**

The general mission of the Construction and Building Science Program, as contained in the Mission of the College, is to offer programs and activities that reflect those characteristics that help define an educated person. These characteristics include a level of general education that enables the individual to understand his or her culture and environment; the development of skills in analysis, communication, qualification, and synthesis necessary for further growth as a lifelong member of society; the identification of a system of personal values based on accepted ethics that lead to civic and social responsibility; and the attainment of skills that enhance the development of leisure activities and a healthful lifestyle. These characteristics are attained not only through organized courses and programs, but through a variety of social, cultural, civic and other educational activities that are offered based on the needs of the community.

Therefore, the mission of the Construction and Building Science Technology Department continues with providing the building and architecture industry with graduates that can function effectively in the workplace.

**Program Outcomes**

1. Continuous growth in student enrollments and student employment verifies that Construction and Building Science Technology produces graduates who are well educated and informed of building industry.

**Program Level Student Learning Outcomes:**

The following 13 standards are the new Student Learning Outcome (SLO) required by the American Council for Construction Education (ACCE). This is the accreditation organization body for Construction Management Program:

1. Demonstrate effective communication, both orally and in writing.
2. Demonstrate the ability to estimate quantities and costs for the bidding process in a construction project.
3. Demonstrate the ability to schedule a basic construction project.
4. Demonstrate the ability to use current technology related to the construction process.
5. Interpret construction documents (contracts, specifications, and drawings) used in managing a construction project.
6. Apply basic principles of construction accounting.
7. Use basic surveying techniques used in building layout.
8. Discuss basic principles of ethics in the construction industry.
9. Identify the fundamentals of contracts, codes, and regulations that govern a construction project.
10. Recognize basic construction methods, materials and equipment.
11. Recognize basic safety hazards on a construction site and standard prevention measures.
12. Recognize the basic principles of structural design.
13. Recognize the basic principles of mechanical, electrical and piping systems.

**Summary of Access, Productivity and Effectiveness (Including, but not limited to, program load, success rate, retention rate, completion rate)**

**Award Sought Headcount by Program CIP code**

15.1001 – Construction and Building Science Technology	Year Fall	AAS	STC	CER	NDS	Total Headcount
	2013	56	0	0	0	56
	2014	54	0	0	0	54
	2015	77	0	0	0	77
	2016	79	0	0	0	79

As per College records, the Fall of 2015 and 2016 enrollments show significant increases over the previous years average enrollments. This shows a substantial positive growth in enrollment for this department. The Department is putting its utmost efforts forward to keep such growth for upcoming academic years as well.

**IPEDS Completion Data for Construction and Building Science Technology**

15.1001 – Construction and Building Science Technology  Three-Year Graduate Data	Year	STC	CER	AAS	Total
	Summer 2013- Spring 2014	9	8	6	23
	Summer 2014- Spring 2015	2	2	3	7
	Summer 2015- Spring 2016	15	15	17	47
	Three Year Average	8.67	8.33	8.67	25.67

### Annual Credit Hour Production

15.1001 – Construction and Building Science Technology  Three-Year Credit Hour Production Data	Year	AET	CDT	CMT	Total
	Summer 2013- Spring 2014	300	98	365	763
	Summer 2014- Spring 2015	253	55	369	677
	Summer 2015- Spring 2016	265	78	459	802
	Three Year Average	272.67	77	397.67	747.33

#### Internal Conditions:

##### 1. Technology

- a. The technology that is being used within the Construction and Building Science Department is all up-to-date, in good working order, and is valued by both faculty and students. The administration has been fully supportive as updates are needed for software and hardware that directly and indirectly impact student learnings. Future upgrades to computer hardware is driven by the demands of computer software. The department's budget is designed and capable of absorbing any fluctuations in hardware or software needs.
- b. The department is equipped with two computer labs and a total of 39 double-monitor computer stations. These computers are loaded with the latest Architecture CAD version, Microsoft Project (a Construction Project Scheduling Software), On Screen Take Off (a Construction Cost and Estimating Software) and complete Office Suite.
- c. The department currently is fully equipped with document cameras, projectors and computers within all its classrooms. This equipment has been used heavily by faculty and students for better demonstration of their lectures and project presentations.

## 2. Budget

a. Currently, there are two funding accounts that support the Construction and Building Science Technology Department:

1. The general Construction and Building Science Department budget (#10003) is sufficiently supporting faculty salaries, office needs, lab supplies, professional development, printing and local travel.
2. The general contractors licensing board fee (#229001) are funds derived from the annual Alabama General Contractors license dues. A percentage of all general contractor license fees are to be split among all accredited construction and engineering schools within the state. The size of this annual amount depends on many changing factors. The number of students graduating with a construction management degree and the number of general contractors purchasing and renewing their licenses each year are the two primary factors that determine our income of this account. The college's Financial Services Department and the Construction and Building Science Department work together to manage the balance of this account. This account supports some faculty and student travel and needed building materials and office supplies. The vast majority of this account is reserved for the purchase of computer hardware and software.

b. Upcoming purchases will include, but are not limited to:

- |  |        |
|--|--------|
| 1. Mobile white Dry-Erase board for classrooms                 | \$700  |
| 2. Overhead projector for Conference room                      | \$500  |
| 3. Electric motorized Screen for Conf. room                    | \$350  |
| 4. Three Printers, 8 ½"x11" Laser for computer labs and office | \$1500 |
| 5. Ink supplies for large and small format printers            | \$3000 |
| 6. Print Head for Large Format Printer (Plotter)               | \$150  |
| 7. Two 24" W and two 36" W paper rolls for plotters            | \$150  |

8. Adding books to CBST library	\$500
9. Classroom chairs x 25	\$2500
10. Two plastic tanks for Concrete Lab.	\$200
11. Lime and other supplies for Concrete lab.	\$500
12. Tools and other supplies for wood shop	\$1500

### 3. Staffing

The Construction and Building Science Department (CBST) currently has 2 full-time faculty:

**Mike Safavi, AIC, CPC**

Program Coordinator, Instructor, Department Advisor  
and

**Murray Jones**

Instructor, Department Advisor

Part-time instructors/Adjunct faculty are being hired as needed. Both faculty members teach full-time, perform office duties and student academic advising, per college requirements. All the support (Financial Aid, Advising, Library) and administrative (Office Managers, Deans, Business Office) departments help to maintain the high academic quality of the CBST department.

### 4. Resources

JSCC construction graduates have been satisfying construction management and architecture employer needs in this area since 1968. Since the beginning, the Department has been supported by both national and local builders and contractors associations (GBAHB, NHE, NAHB, AGC, CEFA). Department graduates are hired by small or large local and national builders and architecture firms (Doster Construction, Brasfield and Gorrie, Robins and Morton, DR Horton Homes, Harris and Doyle Homes, and others). The Department's reputation and history of providing well-educated and efficient construction professionals is a great resource that will continue to attract new CBST students.

The CBST Department has a good supply of literary resources for student use within the JSCC Main Library, within the Department and additional literature will be ordered as needed. The Department's students and faculty have adequate access to drafting tables, computers, printers and large format printers (plotters). The two-full-time faculty offices are located close to the CBST classrooms and are staffed during the day and late into the evening accommodating to varying student schedules and needs.

The American Council for Construction Education (ACCE) accredits the Department's Construction Management Degree (CO59). ACCE accredits construction education programs in colleges and universities that request its evaluation and meet its standards and criteria. ACCE is recognized by the Council for Higher Education Accreditation (CHEA) as the accrediting agency for Masters, Baccalaureate and Associate Degree programs in construction, construction science, and construction management and construction technology located in North America. The Construction Management degree at JSCC is one of the only thirteen two-year accredited degree in North America, and is the only accredited two-year Construction Management degree, in the state of Alabama.

## 5. Enrollment

The Construction and Building Science Technology Department consists of both traditional and non-traditional students. As the building market improves, the department expects enrollment and graduation numbers continue to increase. The department currently well exceeds the minimum required graduates' number of **7.5** over a three-year period. Currently, the three-year graduates' average for this department is **25.67** and continues to grow.

Existing national forecasts have the construction market in Alabama continues to grow. The enrollment within our department follows the trends of the building trades; we are expecting to see steady improvements in our enrollment numbers throughout this next year.

In Fall 2015 and 2016, we witnessed over **41%** increase in enrollment compared to the previous two years average. The Department is proud of this accomplishment and its goal is to continue with such growths.

**Award Sought Headcount by Program CIP code shows the following:**

15.1001 – Construction and Building Science Technology	Year Fall	AAS	STC	CER	NDS	Total Headcount
	2013	56	0	0	0	56
	2014	54	0	0	0	54
	2015	77	0	0	0	77
	2016	79	0	0	0	79

**Headcount by academic semester and year shows the following:**

15.1001 – Construction and Building Science Technology	Semester	2014 2015	2015 2016	2016 2017	Average Headcount per semester
	Fall	54	77	79	70
	Spring	49	71	70	64
	Summer	29	44	44	39
	Total	132	192	193	173

## 6. Facilities

The Harold Martin Building:

- a. All classrooms and labs are fully equipped and ready for student use. There are sufficient rooms in Harold Martin Building for every course offered by the Department. Individual rooms have been carefully designated



to accommodate the nature of the courses regarding to lectures and labs requirements.

- b. The faculty offices are reasonably furnished, clean and relatively comfortable. Upgrades to the building existing air conditioning system is past due. We encourage people to bring jackets to class in the summer and layers in winter. The building is usually more than warm in the winter or humid when the seasons change. These extreme temperature variations are caused by an old system that is often out of order and individual room thermostats which are non-functioning.

## **7. Equipment**

- a. The wood shop is a useful resource for the students. It is adequately equipped and ready for student and class use. This wood shop requires on going replenishment for tools and material that is supported by our annual budget.
- b. The two computer labs are equipped with a total of 39 double-monitor stations. These computers are loaded with Architecture and Construction Software. Students are welcomed to use these computers before and after their class periods to complete their assignments.
- c. The CBST Department is equipped with Land Surveying Transits and Tripods. These equipment are required to accompany the Surveying and Layout Course and get replenish as required.

## **External Conditions (such as state funding, accrediting agencies, advisory committees, postsecondary policy changes)**

### **State Funding:**

The general contractors licensing board fee (#229001) are monies derived from the annual Alabama general contractor's license dues. A percentage

of all general contractor license fees are to be split among all accredited construction and engineering schools within the state. The size of this annual check depends on many fluctuating factors. The number of students graduating with a construction management degree and the number of general contractors purchasing and renewing their licenses each year are the two primary factors that determine our income to this account. These funds help to support the program and its activities.

#### **Accrediting Agencies:**

The American Council for Construction Education (ACCE) accredits the Department's Construction Management Degree (CO59). ACCE accredits construction education programs in colleges and universities that request its evaluation and meet its standards and criteria. ACCE standards are ever evolving to keep department graduates performing at a high level. The standards are now requiring Student Learning Outcomes for each class.

#### **Program Industry Advisory Committee (IAC):**

The IAC for the CBST Department is well active in meetings. This committee along with departmental faculty meet twice a year to discuss suggestions and ideas regarding improvement of the department and student learning outcome. The committee continues to grow and improve each year. The IAC consists of national and local builders associations (GBAHB, NHE, AHB, AGC, CEFA), as well as, small and large local and national contractors and architecture firms (Doster Construction, Brasfield and Gorrie, Robins and Morton, DR Horton Homes, Harris and Doyle Homes). The IAC's reputation and history of providing useful advice is a great resource that will continue to benefit the CBST students and the department.

#### **Department of Postsecondary Education Policy Changes:**

- The Alabama Community College System (formerly Department of Postsecondary Education) has a new Board of Trustees that was appointed by the Governor and confirmed by the senate on May 27, 2015. New policies may develop that reflect changes within the Construction and Building Science Technology Program. The program and the college adheres to any and all policy and procedural changes as established by the Alabama Community College System.

- American Council for Construction Education has changed all its Accreditation and Re-Accreditation Standard Requirement. The new standards are based on Student Learning Outcome (SLO). The new standards are implemented. CBST re-accreditation visit in 2019 must comply with new standards. These new standards may be reviewed on page 2.

### **2015-2016 Accomplishments:**

This was a productive year for this department.

- All the classrooms lab computers were updated with the latest CAD software. The lab computers were loaded with Microsoft Project and On-Screen-Take-Off as well. These software were acquired free of charge to Jeff State as academic copies for this department. The updates continue every time the need arise.
- Mr. Alex Rudyshin, a construction Management student, won the Alabama Associated General Contractors of America (AGC) academic scholarship. This scholarship was one of the two state wide academic scholarship. Congratulations Alex!
- Local construction companies continue recruiting students for various construction and architectural positions. While the economic state of construction is improving, our department and its students are encouraged by positive industry predictions. The Department is encouraged and optimistic in more growth of the programs in the upcoming years.
- The Department continues to attract highly qualified part-time adjunct instructors who are motivated to teach and improve the courses they teach.
- The Construction and Building Science Technology department will continue to offer both the traditional and more technological courses relating to construction and architectural/civil education.

- The Department continues to set efforts to increase student and industry interactions. The Department will remain involved attending functions with the Greater Birmingham Association of Home Builders (GBAHB) and the Alabama Associated General Contractors Association (ALAGC). Such events have given the department much needed visibility that resulted in the hiring of several of our graduates.

### **2016-2017 Accomplishments:**

As well as last year, this was a productive year for the Construction and Building Science Technology Department:

- Faculty attended the American Council for Construction Education (ACCE) Annual and Mid-Year Conferences in Atlanta, GA and Orlando, FL. This conference was predominantly intended to explain changes in the ACCE Accreditation process and requirements. Faculty attended extensive training, workshops, and meetings to apprehend such changes.
- Mr. Kyle Bowman, a construction Management student, wins the Alabama Associated General Contractors of America (AGC) academic scholarship. For two consecutive years, this scholarship was awarded to a Jeff State CBST student. Congratulations Kyle!
- Ms. Danielle Simmons, a construction Management student, was one of the only eight construction students, nation-wide, who wins the National Association of Home Builders (NAHB) national scholarship award. This academic scholarship provided the winners to attend a paid one-week informative workshops in Washington D.C. sponsored by NAHB. Congratulations Danielle!
- Due to the needs of local industries, Ironworker option was discussed by ACCS and assigned to CBST Department. This option was designed as a Short Certificate Program by Jeff State with cooperation of Garrison Steel, Inc. a local Pell City steel manufacturer. The courses for this Short Certificate followed NCCER courses of Ironworker Level I. This Short Certification was

implemented in Spring 2017 with approval of SACS and ACCS as a credit program. 22 Dual Enrollment High School Students from Pell City and Talladega School systems started and finished Ironworker Short Certification classes in two mini-semesters throughout Spring of 2017. Fifteen of these students successfully completed this Ironworker Certification.

- Future continuation of the Ironworker Short Certification will follow as the industry deems the need. Level II and Level III of Ironworker certification may continue as non-credit option.

### Unit Goals for 2017-2018

Unit Goals	Objectives	Method of Assessment	Additional Funding Required
<b>1.) Increase enrollments in Construction and Building Science Technology due to the growth in demands of the construction industry. This must be done by advertising and recruiting efforts at the local High Schools and the community.</b>  <u><b>Program Outcomes</b></u>  <i>1. Local and National employers indicate the</i>	<b>a.)</b> Attend local High School's Career Day and introduce the CBST Programs.  <b>b.)</b> Inviting local High School Counselors to the CBST Industry Advisory Committee meetings.  <b>c.)</b> Advertisement via internet, high school print material, etc.	<b>a.)</b> Advertisement for CBST department must be an ongoing goal.  <b>b.)</b> The Program must be recognized and recommended by Local High School Career Counselors and local community industry leaders.  <b>c.)</b> Local populace need to recognize JSCC CBST department and its values via internet, local high school print material, etc.	<b>a.)</b> CBST faculty to communicate with and travel to local High Schools and attend their Career Days. Estimated Cost: \$1,000 annually.  <b>b.)</b> Annual cost of \$200 Local High Schools Career Counselors and faculty luncheon.  <b>c.)</b> Advertisement material needed for CBST Department:  -Annual cost of 3,000 for departmental brochures, posters,

<p><i>need for graduates in Building Science Programs.</i></p> <p><i>2. Most of our graduates are employed in building industry field.</i></p>			<p>and mass potential students' mail.</p> <p>-Annual cost of \$3,000 for advertisement via internet, local high school print material, etc.</p>
<p><b>2.) Offer the latest computer software and hardware technology available to the construction and architecture industries.</b></p> <p><b><u>Program Outcomes</u></b></p> <p><i>1. Local and National employers indicate the need for graduates in Building Science Programs.</i></p> <p><b><u>Program Level Student Learning Outcomes:</u></b></p> <p><i>2. Demonstrate the ability to estimate quantities and costs for the bidding process in a construction project.</i></p> <p><i>3. Demonstrate the ability to schedule a</i></p>	<p><b>a.)</b> The hardware requirements within the department are depend upon the software requirements.</p> <p><b>b)</b> Replace three 8 ½" x 11" laser printers for the computer labs and office.</p> <p><b>c)</b> Replenish supplies for the computer labs.</p>	<p><b>a.)</b> CBST Industry Advisory Board (IAC) along with the CBST faculty determines the adequacy of the department's computer hardware and software twice a year during IAB meetings.</p>	<p><b>a.)</b> All the CBST Software are academic copies for our departmental use and there are no fees at this time.</p> <p><b>b)</b> Estimated cost for the three 8 ½" x 11" laser printers is \$1500.00</p> <p><b>c)</b> Estimated ink, paper rolls, printer head is \$3300.00</p> <p><b>d)</b> Estimated annual cost for Associated Schools of Construction CBST Program membership is \$760.00.</p> <p><b>e)</b> Two Industry Advisory Committee meetings annually, one in Fall and one</p>

<p><i>basic construction project.</i></p> <p><i>4. Demonstrate the ability to use current technology related to the construction process.</i></p>			<p>in Spring Semester. \$700.00 annually.</p>
<p><b>3.) Explore and/or develop other degree options in Construction and Building Science to accommodate for the needs of industry</b></p> <p><u><b>Program Level Student Learning Outcomes:</b></u></p> <p><i>5. Interpret construction documents (contracts, specifications, and drawings) used in managing a construction project.</i></p> <p><i>8. Discuss basic principles of ethics in the construction industry.</i></p>	<p><b>a.)</b> Explore, identify, and recommend CBST degree options that can be offered and taught in our current physical facilities.</p>	<p><b>a.)</b> CBST Industry Advisory Board (IAC) along with the CBST faculty, during its annual meetings, may discuss and recommend other degree option that local and national building industry need.</p> <p><b>b.)</b> CBST faculty, will determine the “Program Level Student Learning Outcomes” for such degree courses.</p>	<p><b>a.)</b> CBST faculty will determine the adequacy the physical facilities and labs to develop such degree program(s).</p> <p><b>b.)</b> Any requirement for new or updated technology and equipment will be identified by faculty and ordered by Program Coordinator.</p>
<p><b>4.) Create a comfortable learning environment for</b></p>	<p><b>a.)</b> Identify the need for additions, replacement, and improvement of CBST classroom</p>	<p><b>a.)</b> Faculty to explore and recommend CBST needed classroom facilities, furniture</p>	<p><b>a.)</b> The following items are needed for adequacy of our existing classrooms:</p>

<b>CBST faculty and students</b>	facilities, furniture and teaching equipment to create a more desirable learning environment for CBST students.	and teaching equipment. Program Coordinator to analyze and allocate adequate budget for such needs.	<ul style="list-style-type: none"> <li>• Mobile Dry-Erase Board: \$700</li> <li>• Twenty-Five Classroom Chairs to replace broken ones: \$2500</li> <li>• Adding books to CBST library: \$500</li> </ul>
<b>5.) Explore the possibility for development and implementation of Industry Internship Programs for students in CBST.</b>	<b>a.)</b> Explore and recommend the development and implementation of Industry Internship Programs for students in Construction Management and Architectural/Civil Design.	<p><b>a.)</b> CBST Industry Advisory Board (IAC) along with the CBST faculty, during its annual meetings, discuss and recommend the possibility for development of Industry Internship Programs for students in CBST.</p> <p><b>b.)</b> CBST faculty, to determine the “Student Learning Outcomes” for such internship programs.</p>	<b>a.)</b> CBST faculty will determine and recommend such Industry Internship Programs.



### Unit Goals for 2018-2019

Unit Goals	Objectives	Method of Assessment	Additional Funding Required
<b>1.) Update all lab equipment and spaces to meet faculty and student needs as well as the ACCE requirement for Construction Management Re-Accreditation visiting in Spring 2019</b>	<p><b>a)</b> may require replacing 39 computer stations to be capable of handling updated software. Existing computers will approximately be five-years old.</p> <p><b>b)</b> Identify equipment needed for concrete testing lab, wood shop, and surveying lab.</p> <p><b>c)</b> Identify classroom equipment needed for teaching purposes.</p>	<p><b>a)</b> Equipment, material and supply will be requested by faculty as needed and ordered by the Program Coordinator.</p>	<p><b>a.)</b> Required material and supplies:</p> <ul style="list-style-type: none"> <li>- Concrete testing supplies: \$1,000 annually.</li> <li>- Printer lab: \$3,000 annually.</li> <li>- Wood shop tools, safety equipment, and supplies: \$2,000 annually.</li> </ul> <p><b>b)</b> Estimated cost for Projector and Screen for conference room: \$1,200</p>
<b>3.) Offer the latest computer/software technology available to the construction and architecture industries.</b>  <u><b>Program Outcomes</b></u> <i>1. Local and National employers indicate the need for graduates in</i>	<p><b>a.)</b> The hardware requirements within the department are depend upon the software requirements.</p>	<p><b>a.)</b> CBST Industry Advisory Board (IAC) along with the CBST faculty determines the adequacy of the department's computer hardware and software twice a</p>	<p><b>a.)</b> Estimated annual cost for Associated Schools of Construction CBST Program membership is \$760.00.</p>

<p><i>Building Science Programs.</i></p> <p><b><u>Program Level Student Learning Outcomes:</u></b></p> <p><i>4. Demonstrate the ability to use current technology related to the construction process.</i></p>		<p>year during IAB meetings.</p>	
<p><b>4.) Secure Articulation Agreements with local and near proximity out of state universities that offer Construction Bachelor Degrees. (ongoing goal)</b></p>	<p><b>a.)</b> Universities that offer Construction Bachelor Degree in neighboring states will be identified.</p> <p><b>b.)</b> Line of communication will be established with such universities and, their potentials will be explored.</p> <p><b>c.)</b> Continue to communicate with Auburn University Building Science School regarding an Articulation Agreement between the two schools.</p>	<p>a.) JSCC articulation agreement with Tuskegee University's Construction Science and Management (CSM) will be utilized as a sample instrument to introduce CBST intentions for such Articulation Agreements.</p>	<p>a.) Faculty travel to universities in neighboring states (\$2,000)</p>