

**Construction Technology  
University of Alaska Southeast**

**2018/19 Annual Report on Assessment of Student Learning Outcomes**

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**Program Overview (revised)**

The Construction Technology program at UAS provides high quality learning opportunities in a supportive environment. Students learn new skills or advance existing skill levels by participation in courses designed to disseminate current information on best practices that apply directly to employment in construction related jobs and pathways to professional degree programs.

**Vision**

The Construction Technology department aligns course offerings and student experiences with UAS core themes and objectives by:

- Providing students access to educational opportunities through evening, distance learning, and non-credit courses. All program students work with a program faculty advisor.
- Providing teaching and learning with highly qualified faculty who are rooted in the construction industry. Faculty participate in professional development opportunities by attending courses, seminars and workshops.
- Engaging in unique partnerships with the community, students are creating affordable, durable, energy efficient housing.
- Offering programs and services rooted in its unique natural setting
- Contributing to the economic development of the region and the state through basic applied research and public service
- Forging dynamic partnerships with other academic institutions, government agencies, and private industry.

**Program-Level Student Learning Outcomes and Assessment Methods**

Students will be able to:

1. Describe and apply basic construction techniques and concepts
2. Safely and efficiently use hand and power tools utilized in construction
3. Define best building practices for energy efficient; durable buildings in a cold, wet, maritime environment
4. Create simple design drawings using AutoCAD
5. Create a schedule and estimate for a single family dwelling

## Assessment Methods

Programs evaluated	Assessment Method(s):
Occupational Endorsement- Construction Technology	pre & post testing, field & lab exercises, quizzes, homework, midterm & final exam/project
Certificate – Drafting Technology	pre & post-testing, weekly drawing assignments, portfolio review, writing assignments, midterm & final exam/projects
AAS Construction Technology	pre & post testing, field & lab exercises, quizzes, homework, lab projects, midterm & final exam/project

Measures	Goal 1	Goal 2	Goal 3	Goal 4	Use of information
Review of student learning through observation; review of completed projects, homework, exams, and written assignments.	x	x	x	x	Faculty use student results from assessment methods to evaluate teaching techniques, assignment appropriateness to learning outcomes, and adjust curriculum when appropriate
Students complete projects of increased complexity	x		x	x	Faculty use student results from assessment to evaluate effectiveness of pre-requisite courses in preparing student for advancement to more complex tasks, demonstration and analysis
Sample employers to evaluate how well majors are doing in the workplace	x	x	x	x	Data are reported to the faculty to facilitate improvement to courses

### Course-Level Student Learning Outcome Goals

N = Novice  
A = Apprentice  
P = Proficient

Courses	Goal 1	Goal 2	Goal 3	Goal 4
CT 100 Woodworking		N		
CT 120 Basic Construction Techniques	N	N	N	

CT 125 Introduction to Drywall	A	A		
CT 135 Residential Wiring	A	A		
CT 140 Residential Plumbing & Heating	A	A		
CT 155 Woodworking II		A	P	
CT 170 Residential Design, Codes & Standards	N		A	A
CT 175 Introduction to AutoCAD	N			N
CT 181 Intermediate AutoCAD	P			A
CT 201 Cold Climate Construction	P		A	
CT 222 Building Construction I	P	P	P	
CT 223 Building construction II	A	A	A	
CT 227 Residential Planning and Estimating	P		P	
CT 230 Residential Mechanical Ventilation	P	P	A	

### Data Collection and Analysis

- Students take pre-course and post-course tests to assess learning outcomes. Analyses of outcomes are used to determine material that may need additional coverage.
- Assignments, quizzes, midterm and final exams are used to evaluate student understanding of course material, and are evaluated to determine if specific topics are clearly understood. Hands-on demonstration of skills is an on-going part of most of the classes and happens in in the construction lab, on the construction site, or in the computer lab.
- Project work and lab assignments show tangible evidence of student understanding of lectures and demonstrations.
- Results of on-line course evaluations are reviewed to assess course strengths and weaknesses. This method of review is an insignificant part of the process of continuous improvement because of the lack of data collection. Very few students complete the online course reviews.
- Professional advisory committees are consulted, in collaboration with the JDHS Workforce Advisory board, for industry trends and work place skills expected of graduates of the programs.

## **Key Findings (2018/19):**

- The advisory committee feedback continues to support efforts to develop construction/design skills along with an emphasis on soft skills development such as; getting to work on time; being prepared to work; staying focused on the task at-hand and asking thoughtful questions.
- Construction employers are looking for students with experience on a jobsite using tools of the trade and safe building practices.
- The design industry is looking for students with the same soft skill, and experience with current design software. Over the past several years, there has been a shift from use of AutoCAD to Revit.
- Students continue to use portfolios to submit analytical work and design projects. This has helped faculty to assess student learning and provide feedback in a timely manner. It also provides feedback to faculty, which allows alignment of learning material to meet the needs of the students.
- Similar to last assessment, there still has not been any improvement in student's college readiness. CT students are still struggling with the program's required math, English and communication courses and this can make it challenging when students are completing CT writing and analytical assignments.

## **Assessment Results and Improvement plan**

Changes to the Associates degree curriculum, to make the course sequence easier to follow and understand for students and potential employers, were completed fall 2018, forwarded to the curriculum committee and approved for implementation fall of 2019.

Several new Occupation Endorsements received approval in AY18/19, for the fall 2019 semester. Creation of the Occupational Endorsements are a response to the challenge many students in the program experiences with the general education requirements of the AAS degree. OE's provide skills training for job-ready placement.

CT faculty will continue to work closely with Juneau School District and the Juneau Housing Trust to provide experiential learning opportunity for UAS and Juneau Douglas High School construction technology students. The project began in August 2018 and was an essential component of the hands-on skills training for the academic year.

The two homes under construction allowed faculty to assess students ability to accomplish three of the five program level student learning outcomes. These projects have been highly successful at engaging students in practical application of the skills taught in most courses required in the construction programs. The House Build projects have also provided the students with practice at soft skills required by employers by requiring student come to the job-site on time, ready to work and to stay engaged in all aspects of building homes.