

**Construction Technology
University of Alaska Southeast**

2020/21 Annual Report on Assessment of Student Learning Outcomes

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Program Overview

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 responsive to the unique natural setting of Southeast Alaska
- Contributing to the economic development of the region and the state through basic applied research, and engagement in 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 sketching and software
5. Create a schedule and estimate for a single family dwelling

Assessment Methods

Programs evaluated	Assessment Method(s):
CT Occupational Endorsements Computer Aided Drafting Technician Residential Light Construction Exterior Finishes Interior Finishes Framing	pre-& post exams, field & lab exercises, quizzes, homework, midterm & final exam/projects
Certificate – Drafting Technology	pre-& post exams, review of weekly drawing assignments, writing assignments, final projects, assessment of internship experience
AAS Construction Technology	pre-& post exams, field & lab exercises, quizzes, homework, lab projects, midterm & final exam/projects

Measures	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	Use of information
Review of student learning through observation, review of completed projects, homework, exams, and written assignments.	x	x	x	x	x	assessment results are utilized to evaluate teaching techniques, assignment alignment with learning outcomes, adjust curriculum as
Students complete projects of increased complexity			x	x	x	assessment results are utilized to evaluate effectiveness of pre-requisite courses in preparing students to complete more complex tasks, and
Survey employers to evaluate how students are doing in the workplace	x	x	x	x		Data is collected to facilitate improvement to curriculum, courses, and programs

Course - Student Learning Outcomes (SLO)**N** = Novice, **A** = Apprentice, **P** = Proficient

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5
CT 100 Woodworking	N	N		N	
CT 102 Intro to the Construction Trades	N	N	N		
CT 103 Construction Tools and Materials	N	N	N	N	
CT 104 Construction Safety – OSHA 10-hour Cert.		A			
CT 135 Residential Wiring	N	N	N		
CT 140 Residential Plumbing & Heating	N	N	N		
CT 155 Woodworking II		A		A	
CT 170 Residential Design, Codes & Standards	A		A	A	N
CT 175 Introduction to AutoCAD	N			A	
CT 181 Intermediate AutoCAD	N			P	
CT 201 Residential Building Science	A		P	N	
CT 227 Residential Planning and Estimating	P		A		P
CT 230 Residential Mechanical Ventilation	P	A	P	N	

NOTE:

The results from the last two years of offering intensive one-week introductory courses, (CT 102, 103, 104) which prepare students to complete courses in the CT Associates, Certificates and the Occupational Endorsements, demonstrate this was a successful initiative. This change to the program meets the needs of both the student and the faculty in preparing students to successfully continue to all of the construction programs currently offered and/ or allow students to self-assess their interest in the construction trades.

Last year's assessment report noted a change to use of NCCER curriculum in several courses. Working with our partners and advisory committee it has been determined that evaluating students using NCCER testing is no longer relevant in preparing students for the workplace. As a result, faculty have incorporated appropriate/relevant NCCER learning objectives into the standard curriculum already in place. The programs no longer require students to take the NCCER exams.

OPPORTUNITIES:

Changing the NCCER curriculum to job-based skill application by applying learning directly to the construction of the House Build homes is working particularly well for the students who are visual, hands-on learners. This teaching modality also enhances learning for all students.

ASSESSMENT NARRATIVE:

Program students participate on projects; write narratives about the concepts learned; complete quizzes and oral and written assessments. These artifacts are utilized to determine what are students are able to do with this knowledge, at the given any time during enrollment in the program.

Data Collection and Analysis

- Students take pre-course and post-course tests to assess learning outcomes. Analyses of outcomes determine material that may need additional coverage at the course level or the program level.
- Assignments, quizzes, exams align with the student learning outcomes for the course, and are outlined in the syllabus for each course. Through these assessment tools we evaluate how well student apply course content, and review specific topics that are essential to the goals of the program learning outcomes. Hands-on demonstration of skills is essential to the course experience 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.
- Review results of on-line course evaluations to determine course strengths and weaknesses. This method of review is an insignificant part of the process of our continuous improvement because of the lack of data collected. Unfortunately, very few students complete the online course reviews.
- In collaboration with the JDHS Workforce Advisory board, consultation with professional advisory committees occur on a regular basis. Advisory committees represent a link to industry trends in new building concepts, education, employment, and work place skills expected of graduates of the construction technology programs.

Key Findings (2020/2021):

- 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. Addition of the OSHA 10-hour Certification is an example of providing students with recognizable certificates that are valuable in the work place.
- The design industry is looking for students with great soft skills, and experience with current design software. Over the past several years, there has been a shift from use of AutoCAD to Revit. Redesign of the second semester CAD course includes an introduction of the Revit software program.
- Students continue to use portfolios to submit analytical work and design projects. This has helped faculty to quickly and thoroughly assess student learning and provide focused, tangible feedback in a timely manner. It also provides feedback to faculty, which allows alignment of learning material to meet the needs of the students.

- There appears to be improvement in student's college readiness in general. It may be a result of some intervention work from our partners at SERRC. We have had many conversations with SERRC to identify roadblocks in the program that prevent students from completing courses and programs. They have done an excellent job of identifying students with the potential to be successful rather than enrolling any student who qualifies for their tuition assistance programs.
- Although CT students are still struggling with the program's required math, writing and communication courses, making it challenging when students are completing CT writing and analytical assignments, there seem to be fewer students who are unable to complete the program because of this challenge.

Assessment Results and Improvement plan

A completely revised Associates degree program began fall of 2019. Several new Occupation Endorsements were available for the first time in fall 2019 semester. The results of these changes are now being evaluated.

OE's provide skills training for job-ready placement. Working closely with the Southeast Regional Resource Center (SERRC) to identify and recruit students into the new OE's has led to a increase in CT degree completers.

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. Currently there are two houses under construction on Jackie Street, and is an essential component of the hands-on skills training.

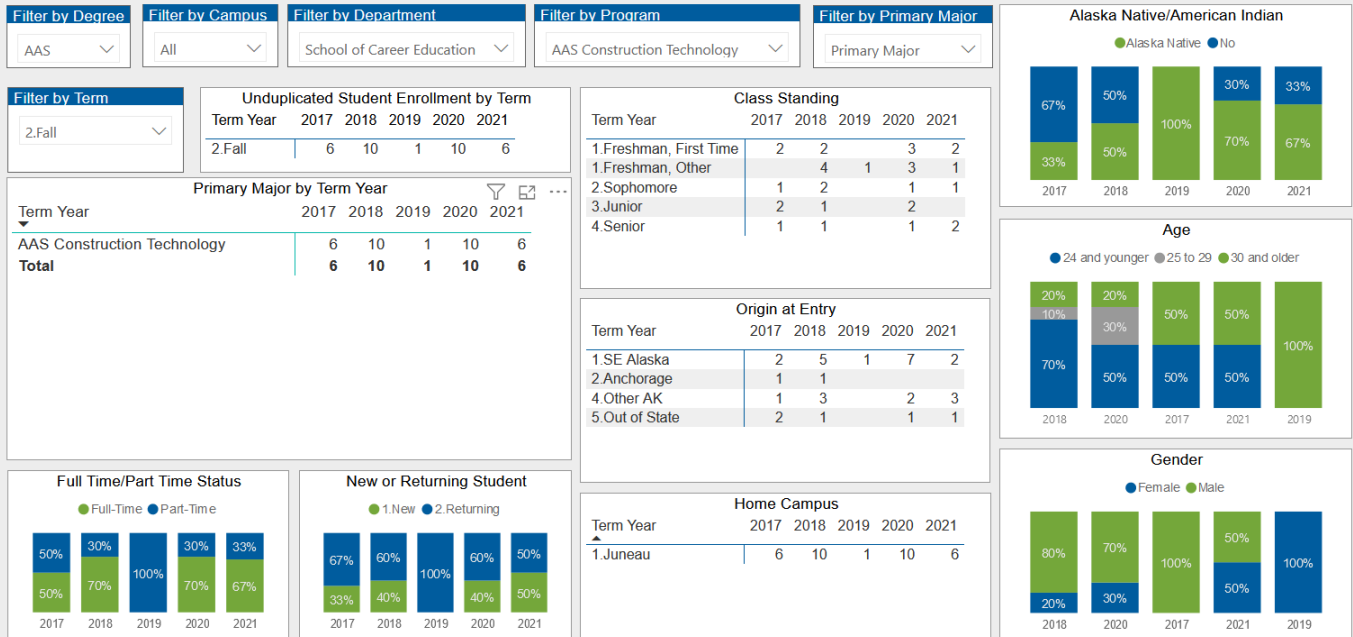
The two homes currently under construction allow faculty to assess student's ability to accomplish the entire five program level student learning outcomes. These projects have been highly successful at engaging students in the practical application of learning outcomes introduced in the construction courses. The House Build projects have also provided the students with practice at soft skills required by employers. Student must come to the job-site on time, ready to work, and to stay engaged in all aspects of the building process. Learning material for most of the CT courses align with the House Build project.

Combined, the program courses, field experiences and internship opportunities provide a wide variety of learning opportunities that seems to be successful for most students and a variety of learning styles.

Enrollment information below is from the Institutional Effectiveness: [AAS Construction Technology data 2017-2021](#).

Student Enrollment, Primary Majors by Term

Official End of Term Data (Close Freeze)



Course Enrollment,

Official End of Term Numbers (Close Freeze)

Select Fiscal Year
2021

Select a Term
☒ Fall
☒ Spring
☐ Summer

Select Campus
Juneau

Select Delivery
All

Select Subject
CT

Select Department
School of Career Education

By Subject Area

term_name	Subject	subject2	Faculty	Courses	Headcount	Course Credit Hours	Student Credit Hours
Fall 2020	CT	Construction Technology	8	22	77	52	149
Spring 2021	CT	Construction Technology	9	21	80	47	173
Total			12	43	157	99	322

By Delivery

Distance	Faculty	Courses	Filled Seats	Course Credit Hours	Student Credit Hours
Distance	1	6	29	18	87
On-Campus	12	37	128	81	235
Total	12	43	157	99	322