

**Construction Technology
University of Alaska Southeast**

2019/20 Annual Report on Assessment of Student Learning Outcomes

Robin Gilcrist, Assessment Coordinator

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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 Occupational Endorsements	Assessment Method(s):
Construction Technology Computer Aided Drafting Technician Residential Light Construction Exterior Finishes Interior Finishes Framing	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 &
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
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,
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 102 Intro to the Construction Trades	N	N		
CT 103 Construction Tools and Materials	N	N		
CT 104 Construction Safety – OSHA 10-hour Cert.	N	N		

NOTE:

In fall 2019, the three courses list above were included in the program to replace CT 120 Basic Construction Techniques. They were taught a number of times fall and spring semester as short, intensive one-week course to help prepare students to prepare for the CT Associates and Certificates. From the results of student assessment and retention, this change to the program is meeting the needs of both the student and the faculty in preparing students to successful continue to all of the construction programs currently offered.

CT 125 Intro to Drywall has not been offered for a number of years and is not required in the program so will be eliminated from program assessment and the 6 year sequence.

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 technique as 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.

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 determine material that may need additional coverage in 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 (2019/20):

- 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. This was a result of changing the curriculum in the Basic Construction to three separate one-credit courses, each with a specific focus.
- 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.
- The second half of the spring semester required quick adjustment to courses in order to provide remote learning because of the Covid-19 shutdown of classrooms. The closer affected most of the CT students, and not all did well with the shift to remote learning. Most of the students enrolled in lab sections had to take incompletes.

- There has been improvement in student's college readiness. Although 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; however, there seem to be fewer students who are unable to complete the program because of this challenge. Faculty have been working closely with SERRC to encourage student to seek additional help to improve math and writing proficiency.

Assessment Results and Improvement plan

A completely revised Associates degree program began fall of 2019. Several new Occupation Endorsements also were available for the first time in fall 2019 semester.

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 substantial 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. The latest project began in August 2018 on a lot on Jackie Street, and is an essential component of the hands-on skills training.

The Jackie Street - House Build project has one completed and occupied home, and two more under construction. Another project will begin fall 2021.

The two homes currently under construction allow faculty to assess students 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 Building Science, Estimating and Scheduling, and Design and CAD, and MEP 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.

Institutional Effectiveness: [AAS Construction Technology data 2016-2020.](#)

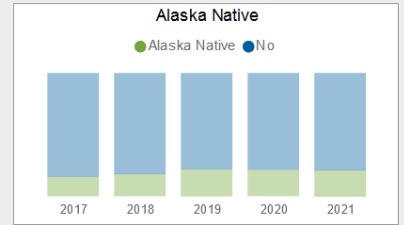
Student Enrollment, Majors by Fiscal Year

Official End of Term Data (Close Freeze)

Filter by Degree: All |
 Filter by Campus: All |
 Filter by Department: All |
 Filter by Program: All |
 Filter by Primary Major: Primary Major

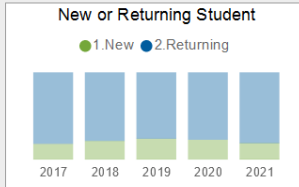
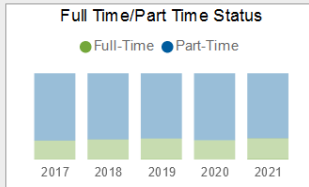
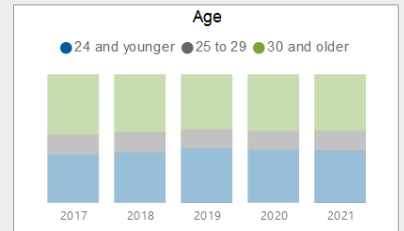
Fiscal Year	2017	2018	2019	2020	2021
1.Summer					1
2.Fall	5	6	10	1	10
3.Spring	6	6	4	3	
Total	8	8	10	3	10

Class	2017	2018	2019	2020	2021
1.Freshman, First Time	2	2	2	0	3
1.Freshman, Other	1	0	4	2	3
2.Sophomore	2	1	2		1
3.Junior	1	3	1		2
4.Senior	1	1	1		1

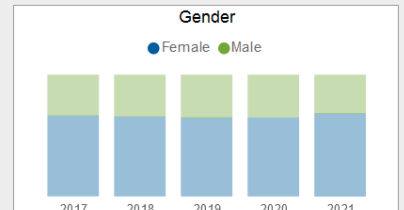


program_det	2017	2018	2019	2020	2021
AA General Program	188	195	170	157	78
AA General Program, Northwest Coast Art					2
AAS Business Administration	68	32	16	6	1
AAS Business Administration, Accounting	18	27	27	24	18
AAS Business Administration, General Business	27	33	36	34	26
AAS Construction Technology	8	8	10	3	10
AAS Fisheries Technology	28	26	30	23	10

Location	2017	2018	2019	2020	2021
1.SE Alaska	5	3	5	2	7
2.Anchorage	1	1	1		
4.Other AK		1	3		2
5.Out of State	1	2	1		1



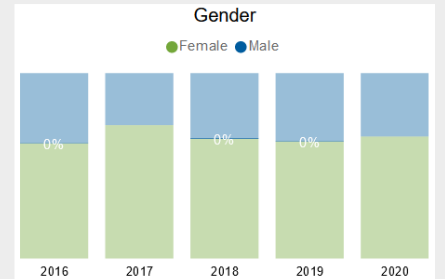
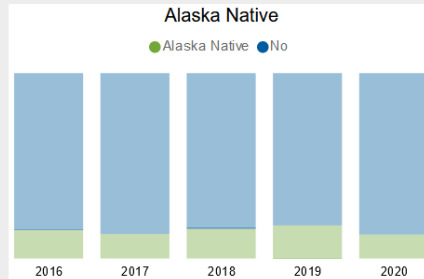
Campus	2017	2018	2019	2020	2021
1.Juneau	8	8	10	3	10



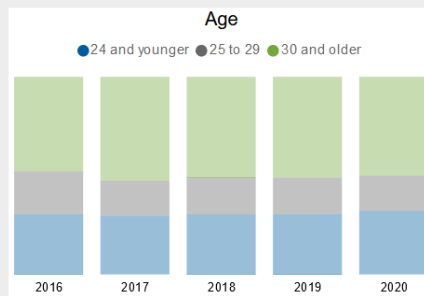
UAS Awards & Degrees

Filter by Fiscal Year: Multiple select... |
 Filter by Level: All |
 Filter by Campus: All |
 Filter by Degree: All |
 Filter by Program: All

Degree	2016	2018	2019
4_AAS	1	2	1
Total	1	2	1



program_det	2016	2017	2018	2019	2020
AA General Program	37	50	45	41	40
AAS Business Administration	30	26	12	5	4
AAS Business Administration, Accounting		2	8	9	8
AAS Business Administration, General Business			1	5	14
AAS Computer Info Office Systems	5	1			
AAS Construction Technology	1	2	1		
AAS Fisheries Technology	2	8	2	6	6
AAS Health Information Mgt	12	11	6	5	4
AAS Health Science	8	8	6	5	6
Total	677	592	668	565	556



school	2016	2018	2019
School of Career Education	1	2	1

campus	2016	2018	2019
Juneau	1	2	1