Construction Technology
University of Alaska Southeast

2022/2023 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 continuing their profession practices while teaching; and by attending courses, seminars and workshops.
- Engaging in unique partnerships with the community, students are creating able to create projects that are utilized by the community
- 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 development, 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 durable energy efficient buildings in a cold, wet, maritime environment.
4. Create simple design drawings using sketching and industry appropriate 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 needed
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 appraise and synthesize learning material
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:

For the past three years the CT program has been offering intensive one-week introductory courses (CT 102, 103, 104) at the start of the fall and spring semesters. This change to the program continues to meet the needs of students and faculty in preparing students to successful continue to all of the construction courses currently offered, and allow students to self-assess their interest in the construction trades.

OPPORTUNITIES:
Unfortunately, the House Build program was a major focus of the Construction Technology department instruction. The program was retired. In it's place the construction students have been creating projects that meet a need in the community.
Students and faculty utilize these projects in a majority of the CT courses by engaging the students in the design, estimation, and construction of the projects Every aspect of the SLO's are applied to some portion of the community projects.

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 students can do with this knowledge, at any time during their 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 (2022/2023):

- 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.
- Although CT students struggle with the program's required math, writing and communication courses. This is challenging when students are completing CT writing and analytical assignments but does not seem keep students from completing the various levels of degrees offered except the AAS.

Assessment Results and Improvement plan

The results of adding Occupation Endorsements in 2019 seem to be very beneficial for the students and faculty by providing preparatory courses ahead of core courses allowing classroom time to be focused on theory and practice with higher level skills.

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 OE's has led to an increase in CT degree completers.

CT faculty will continue to work closely with the community to provide experiential learning opportunity for UAS construction technology students. These projects have been highly successful at engaging students in the practical application of learning outcomes introduced in the construction courses.

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]