



**Career Cluster Description:** The construction career cluster prepares learners to enter an industry which starts with designing, planning, managing, building, and maintaining physical structures and the larger building environment including roadways and bridges, industrial, commercial, and residential facilities. The environmental aspects of the structures as well as restorations and alterations of structures are included in this industry. **Pathways include Design/Pre-Construction, Construction, and Maintenance/Operations.**

**Major Options:** General Contractor/Builder • Specialty Contractor • Construction Engineer • Construction Manager • Superintendent • Project Manager • Construction Foreman • Estimator • Project Inspector • Manufacturer’s Representative • Sales and Marketing Manager • Equipment and Material Manager • Scheduler • Education and Training Director • Safety Director • Construction Inspector • Subcontractor • Preservationist • Service Contractor • Field Supervisor • Specialty Trades Subcontractor • Mason • Construction Craft Laborer • Iron/Metalworker (structural and reinforcing) • Carpenter • System Installer • Electrician • Boilermaker • Electronic Systems Technician • Sheet Metal Worker • Security and Fire Alarm Systems Installer • Concrete Finisher • Glazier • Tile and Marble Setter • Landscaper/Groundskeeper • Elevator Installer • Roofer • Painter • Explosives Worker • Plasterer/Drywall • Paperhanger • Insulation Worker • Drywall Installer • Plumber • Pipe Fitter • Millwright • Heating, Ventilation, Air Conditioning and Refrigeration Mechanic • Carpet Installer • Electrician • Steamfitter • Terrazo Worker and Finisher • Interior Designer • Kitchen Designer • Paint Specialist

**Middle School Option:** Applied Technology 7 & 8, Business Technology, Family and Consumer Sciences 7&8

**RECOMMENDED SECONDARY CAREER DEVELOPMENT SCHEDULE** *Scheduling of classes may vary according to each school’s course offerings and student needs.*

9 <sup>th</sup> Grade		10 <sup>th</sup> Grade		11 <sup>th</sup> Grade		12 <sup>th</sup> Grade	
Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2
English 9-1	English 9-2	English 10-1	English 10-2	Composition	LA Elective	Technical Writing in the 21 <sup>st</sup> Century	LA Elective
Algebra I	Algebra I	Geometry	Geometry	Algebra II	Algebra II		
Integrated Science 9	Integrated Science 9	Biology 1	Biology 2	Geology	Elective		
World History	World History	US History	US History	Alaska Studies	Economics	US Government	Environmental Studies
Physical Ed	Physical Ed	Physical Ed	Health	<ul style="list-style-type: none"> <li>CAD 1</li> <li>CAD 2</li> <li>*CAD 3</li> <li>Housing &amp; Living Environment</li> <li>Surveying &amp; Blueprint</li> <li>*KCC Carpentry 1, 2, 3</li> <li>Carpentry OJT</li> <li>*KCC Construction Electricity</li> <li>Construction Electricity OJT</li> <li>*KCC Welding 1, 2, 3</li> <li>Welding OJT</li> <li>KCC Small Engine 1, 2, 3</li> <li>Small Engine OJT</li> <li>Plumbing &amp; Pipefitting</li> </ul>		Note: KCC course are 1.5 credits per semester	
<ul style="list-style-type: none"> <li>*Computer Keyboarding 1 &amp; 2</li> <li>Applied Technology 1 &amp; 2</li> <li>*Business Computer Applications 1&amp;2</li> </ul>	<ul style="list-style-type: none"> <li>*Material Science &amp; Construction 1</li> <li>*Material Science &amp; Construction 2</li> <li>*Business Logistics 1</li> <li>Intro to Welding</li> <li>Intro to Construction Electricity</li> <li>Intro to Plumbing &amp; Fitting</li> <li>Intro to Carpentry</li> </ul>						



Work-Based Learning Opportunities		Career-Technical Student Organizations (CTSO)	Certifications
<ul style="list-style-type: none"> <li>Apprenticeship</li> <li>Cooperative Education</li> <li>Job Shadowing</li> </ul>	<ul style="list-style-type: none"> <li>Paid/Unpaid Internship</li> <li>School-Based Enterprise</li> <li>Service Learning</li> </ul>	<ul style="list-style-type: none"> <li>FCCLA—Interior Design</li> <li>SKILLSUSA</li> </ul>	NCCER, AWS Career Readiness Certificate (WorkKeys)

The following sample of a Program of Study beyond high school is with the Southern Alaska Carpenters Training Center U.S. Registry #AK000550001, based in Anchorage. Completion of this apprenticeship requires 1,120 hours of classroom instruction and 5,880 hours of on-the-job learning for a total of 7,000 hours. High school math courses recommended by the Carpenters Training Center include Algebra I and Geometry.

Year 1 (320 Hours) Carpenter Apprenticeship	Year 2 (280 Hours) Carpenter Apprenticeship	Year 3 (280 Hours) Carpenter Apprenticeship	Year 4 (240 Hours) Carpenter Apprenticeship
Areas of Instruction	Areas of Instruction	Areas of Instruction	Areas of Instruction
<ul style="list-style-type: none"> <li>Ethics, tools &amp; materials</li> <li>OSHA 10</li> <li>Hammer, saw &amp; nail</li> <li>Wood &amp; metal stake</li> <li>Sawhorse</li> <li>Builder math, ratio &amp; proportion</li> <li>Optical instruments</li> <li>Rigging</li> <li>Framing (wood &amp; metal)</li> <li>Scaffolding (frame &amp; rolling tower)</li> <li>Concrete forming</li> </ul>	<ul style="list-style-type: none"> <li>Review</li> <li>Optical instruments</li> <li>Fall protection</li> <li>Interior finish</li> <li>Joinery</li> <li>Wood stairs</li> <li>Concrete stairs</li> </ul>	<ul style="list-style-type: none"> <li>Review</li> <li>Optical Instruments</li> <li>Scaffolding (metal frame, tube &amp; clamp, systems)</li> <li>Detail/material list for cabin</li> <li>Building layout</li> <li>Framing (floors, walls &amp; roofs)</li> <li>Sheathing (floors, walls &amp; roofs)</li> <li>Exterior finish</li> <li>Asphalt shingles</li> <li>Doors, windows</li> <li>Metal stud framing (soffits)</li> </ul>	<ul style="list-style-type: none"> <li>Review</li> <li>Optical instruments</li> <li>Door hardware</li> <li>Advanced math</li> <li>Blueprint reading &amp; detailing</li> <li>Detail &amp; build cabin</li> <li>CPR/First aid</li> <li>Trust financial seminar</li> </ul>



**POSTSECONDARY OPTIONS**

Two-Year College AA or Proprietary Programs / Tech Prep*	Other Adult Registered Apprenticeships / Tech Prep*	Four-Year College and University Programs	Post-Secondary Certificates	Licenses, On The Job Training, Training Certificates, etc.
<ul style="list-style-type: none"> <li>• AWS training, Construction</li> <li>• Architectural Drafting</li> <li>• Construction Technology</li> <li>• Construction Management</li> <li>• *UAA Tech Prep Articulation</li> <li>• Apprenticeship Tech (A,F,S)</li> <li>• Architecture &amp; Engineering Technology (A)</li> <li>• Construction Management (A,F)</li> <li>• Construction Technology (S)</li> <li>• Construction Trades Tech (F)</li> <li>• Refrigerator &amp; Heating Tech (A)</li> <li>• Welding &amp; Non- Destructive Testing Technology (A)</li> <li>• Welding Tech (A)</li> </ul>	<ul style="list-style-type: none"> <li>• Assoc. Builders/Contr of AK</li> <li>• Electrical Lineman</li> <li>• Electrical Wireman</li> <li>• Ironworkers</li> <li>• Operating Engineers</li> <li>• Asbestos Workers</li> <li>• Alaska Works Partnership Building Maintenance &amp; Repair</li> <li>• Bricklayers</li> <li>• Cement Mason/Plasterer</li> <li>• Laborers</li> <li>• Millwrights</li> <li>• Painter/Taper/Glazier/Floor Covers</li> <li>• Piledrivers</li> <li>• Plumbers &amp; Fitters</li> <li>• Roofers</li> <li>• Sheet Metal Workers</li> <li>• Teamsters</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher</li> <li>• Engineer</li> <li>• Architect</li> <li>• Family &amp; Consumer Sciences—Interior Design</li> </ul>	<ul style="list-style-type: none"> <li>• Architectural Drafting (A)</li> <li>• Civil Drafting (A)</li> <li>• Drafting Technology (F,S)</li> <li>• Heating (A)</li> <li>• Mechanical &amp; Electrical Drafting (A)</li> <li>• Refrigerator &amp; Heating Tech (A)</li> <li>• Structural Drafting (A)</li> <li>• Construction Technology (S)</li> <li>• Construction Trades Technology (F)</li> <li>• Industrial Welding Technology (A)</li> <li>• Non-Destructive Testing (A)</li> <li>• Residential Building Science (S)</li> <li>• Welding Technology (A,S)</li> </ul>	<ul style="list-style-type: none"> <li>• Interior Design A.I.D.</li> <li>• OSHA 10</li> <li>• Power Actuated Tools</li> <li>• Scaffold 16 &amp; 40</li> <li>• Fall Protection</li> <li>• First Aid/CPR</li> </ul>

Major Academic Unit Codes: (A) = University of Alaska Anchorage, (F) = University of Alaska Fairbanks, (S) = University of Alaska Southeast.