

COMMON CTE SYLLABUS TEMPLATE — SVC Aligned

Core Plus Advanced (Aerospace) Manufacturing 2026–2027

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Email	jleander@nwtech.k12.wa.us	Course Schedule	Morning: 8:00–10:30 Afternoon: 11:30–2:00
Location	Anacortes Campus (satellite program)	Website	https://www.nwtech.k12.wa.us
CIP Code / Framework	150613 — Aerospace Manufacturing		

CTE DUAL CREDIT / ARTICULATION INFORMATION

YEARLONG COURSE CTE DUAL CREDIT TASKS & DEADLINES

This class is a CTE Dual Credit class offered in partnership with Skagit Valley College (SVC). Students seeking to earn college credit must follow the CTE Dual Credit application and enrollment processes using the [Apply for Dual Credit](https://www.skagit.edu/academics/high-school-programs/cte-dual-credit/apply.html) site for guidance. (<https://www.skagit.edu/academics/high-school-programs/cte-dual-credit/apply.html>) Students must apply and enroll at SVC within the specified deadlines to earn dual credit. Students cannot obtain credit retroactively.

Earning dual credit is free and there is no cost for the student or family.

Upon successful completion of the program, students may earn college credit for the following SVC courses, provided they meet the applicable course and grade requirements:

- SVC MANF 232
- SVC MANF 132

The following steps will be completed in class with assistance from NCTA instructors:

On or before October 30, 2026	Apply to SVC via CTCLink
On or before January 7, 2027	Enroll in Dual Credit Class(es)

NCTA COURSE DESCRIPTION

This program is a year-long satellite program offered at the Anacortes Campus. Manufacturing industries are looking for employees who understand basic manufacturing processes and can work safely and efficiently in a production environment. This program was designed to fill that need.

The Core Plus Advanced (Aerospace) Manufacturing program prepares students in construction and repair of composite materials as well as entry-level machining and assembly. Students are introduced to traditional and advanced composite materials with emphasis on safe handling and storage of substances used in the curing and cleaning processes, and are exposed to precision measurement, blueprint interpretation, high-grade aluminum surface preparation and marking, precision drilling and countersinking, and accurate riveting practices. Special focus is placed on industry standards of tool inventory and accountability, with additional training in personal protective equipment use. Students also learn Lean Manufacturing principles, including Lean-Six Sigma concepts and identifying and correcting manufacturing process inefficiencies.

SVC COURSE DESCRIPTION(S) & LEARNING OUTCOMES

The following SVC courses are introduced and assessed in this program:

College Course Title	Course Number	Credits
Composites for Manufacturing	MANF 232	5
Course Description:	Course Learning Outcomes:	
Examines fiber-reinforced materials, resin systems, and curing processes used in advanced manufacturing, incorporating hands-on labs for fabrication, testing, and safety in handling. Analyze fibers and resins, apply techniques to produce components, analyze test data to evaluate performance, and evaluate methods to recommend improvements. Emphasizes structural advantages, design considerations, and quality testing for reliability in aerospace, automotive, or high-performance applications.	- Analyze fiber types, resin systems, and their properties for composite applications in manufacturing. - Apply fabrication techniques to produce and cure composite components in lab settings. - Analyze test data to evaluate structural performance and identify defects. - Evaluate fabrication methods and recommend improvements for enhanced reliability, efficiency, and sustainability.	
College Course Title	Course Number	Credits
Materials Science	MANF 132	5
Course Description:	Course Learning Outcomes:	
Introduction to industrial materials most often found in manufacturing operations. Develop an understanding of how the structure and properties of materials for industrial uses influence material selection and the selection of processes used in the conversion of those materials into useful products. Apply material knowledge to the prototype and materials testing process.	- Apply testing methods to conduct hands-on experiments on materials properties in lab settings. - Analyze structures, properties, and test results of metals, polymers, and composites. - Evaluate material suitability for manufacturing processes based on performance, cost, and sustainability factors. - Demonstrate materials processing techniques to connect theory with fabrication challenges and design decisions.	

REQUIRED INSTRUCTIONAL & TECHNICAL COMPETENCIES

Successful completion of the program requires both class work and lab work, and students must apply practical knowledge along with job-search and leadership skills developed through coursework and hands-on application.

BOOKS, MATERIALS & COURSE RESOURCES

Resource / Material	Required?	Provided by	Notes / Link
Safety glasses, ear protection, lab coat, dust mask	Required	NCTA	Provided at beginning of year
Pencil/pen, spiral notebook	Required	NCTA	Provided at beginning of year
3-ring binder with dividers and pencil pouch	Required	NCTA	Provided at beginning of year
Small personal locker	Provided	NCTA	For storing binder and small personal projects

Common hand tools, precision measuring devices (decimal scale), disposable gloves	Provided	NCTA	Provided when needed for labs
Appropriate dress code: full-length pants, closed-toe shoes, durable shop clothing, no loose/baggy clothing or jewelry, long hair tied back	Required	Student	No slippers

EVALUATION & GRADING

NCTA courses use a grading system that measures technical skill development, employability habits, and academic learning. Grades are based on the work students complete, the skills they demonstrate, and the program's professional expectations.

Program Grading Categories

Occupational Education	Science	Math
50% Employability (in class/on time daily, professional interactions, on-task & productive)	40% Labs	40% Labs
20% Safety Quizzes	30% Weekly Quizzes	30% Weekly Quizzes
20% Quarterly Employability Rubric	15% Practice Worksheets	15% Practice Worksheets
10% Practice	15% Quarterly Binder Check	15% Quarterly Binder Check

NCTA Course Grade Scale

A	93% or above	C	73-77.9%
A-	90-92.9%	C-	70-72.9%
B+	88-89.9%	D+	68-69.9%
B	83-87.9%	D	60-67.9%
B-	80-82.9%	NC	59.9% and below
C+	78-79.9%		

CTE Dual Credit Minimum Grade & GPA Conversion

Students must earn a B or higher in each SVC MANF course to earn CTE Dual Credit. The table below shows the SVC percentage-to-GPA conversion:

Letter Grade	% of Points	GPA
A	94-100	4.0
A-	90-93	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3

C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	65-66	1.0
F	0-64	0.0

MAJOR UNITS, ASSIGNMENTS & ASSESSMENTS

This year-long curriculum is broken into 18 units covered throughout the school year. 3D printing and CNC machining will also be introduced during the year (timing TBD).

Unit	Assessment
Unit 1: Material Science	Weekly quiz + lab/practical assessment
Unit 2: Shop Tools and Safety	Weekly quiz + lab/practical assessment
Unit 3: Industrial Safety	Weekly quiz + lab/practical assessment
Unit 4: Standard Operating Procedures	Weekly quiz + lab/practical assessment
Unit 5: Precision Measuring	Weekly quiz + lab/practical assessment
Unit 6: Fasteners	Weekly quiz + lab/practical assessment
Unit 7: Drilling	Weekly quiz + lab/practical assessment
Unit 8: Cutting and Grinding	Weekly quiz + lab/practical assessment
Unit 9: Riveting	Weekly quiz + lab/practical assessment
Unit 10: Print Reading	Weekly quiz + lab/practical assessment
Unit 11: Applied Physics	Weekly quiz + lab/practical assessment
Unit 12: Math for Industry	Weekly quiz + lab/practical assessment
Unit 13: Rigging	Weekly quiz + lab/practical assessment
Unit 14: Hydraulics and Pneumatics	Weekly quiz + lab/practical assessment
Unit 15: Basic Electricity	Weekly quiz + lab/practical assessment
Unit 16: Soldering	Weekly quiz + lab/practical assessment
Unit 17: Troubleshooting	Weekly quiz + lab/practical assessment
Unit 18: Lean Manufacturing	Weekly quiz + lab/practical assessment

Leadership: All students have the opportunity to join SkillsUSA, the program's career & technical student organization (CTSO), which provides leadership and outreach opportunities such as Boeing's riveting assembly competition each spring.

Other: Practicums / class trips tie directly to the curriculum and are treated as an extension of the lesson; professional standards apply, as students will be in professional working environments. Excused absences from a practicum must be arranged in writing, and credit may be made up through outside-of-class work.

ATTENDANCE & PROFESSIONAL EXPECTATIONS

Attendance Policy

The Northwest Career & Technical Academy (NCTA) views attendance much like business and industry: students are considered professionals-in-training and are expected to attend each day fully to maximize learning and productivity. One daily session is equivalent to a half school day, or 3 class periods, so missing one day puts a student behind in both class work and lab work. Absences must be excused by both NCTA and the student's home sending school, and must be reported prior to the missed day whenever possible; no communication is treated as unexcused. School-related absences (testing, sporting events, extracurricular activities) or weather-related closures do not count against Highly Sought After status. If a problem arises with health, food, transportation, housing, or any other barrier, please contact the school or district so support can be provided.

Professional Expectations (Behavioral)

Students are expected to follow applicable laws and the behavior expectations of the school district, NCTA, and the specific program. NCTA students are professionals-in-training and are expected to demonstrate habits that prepare them for success in school and industry. Students who consistently meet these expectations — attending regularly (10 or fewer days off per year), treating everyone professionally, staying on task, and coming ready to work — are eligible for the program's Highly Sought After recognition at the end of the year.

Communicative	Stay in touch, ask for help, and use professional language.
Motivated	Put in your best effort, participate, and meet deadlines.
Reliable	Attend regularly, be on time, and engage in all class activities.
Responsible	Wear required safety gear, keep spaces tidy, stay focused, and dress appropriately for the program.
Team Member	Work well with others, show a positive attitude, and follow procedures.
Trustworthy	Care for equipment, use technology appropriately, and act with integrity.
Feedback / Coachable	Receive feedback professionally and use it to improve performance.
Late Work Policy	
Late work will only receive full credit if the student has an excused absence. It is the student's responsibility to contact the instructor to request any missing work following an absence. Personal accountability and responsibility are important tenets of this program and of NCTA.	

INDUSTRY / COURSE-SPECIFIC ITEMS

Safety / PPE Requirements	Safety glasses are required whenever not in the classroom; ear protection is required when using power tools or in any environment above 50 decibels, per OSHA regulations. Full-length pants and closed-toe shoes are required (no slippers); loose/baggy clothing, loose jewelry, and untied long hair are not permitted in labs.
Field Trips / Clinical / Worksite Learning Expectations	Class trips (practicums) tie directly to the curriculum and attendance is required, as they extend the lesson and provide networking opportunities with area aerospace and manufacturing employers. Professional standards apply, as students will be in professional working environments.
Technology / Device Expectations	Cell phones may only be used before class or after class; they are not permitted during lecture, lab work, or any instruction time in between, in keeping with industry-standard safety and professionalism expectations. No food or drink is permitted in the classroom or labs (meals are before/after class); sealable water bottles are allowed in the classroom during lecture but not in labs.

Communication / Office Hours / Help	Extra help is available to all students who ask. The instructor is available after class at 10:30 and again at 2:00 following the end of classes, and at other times by appointment.
Additional Program-Specific Policies	3D printing and CNC machining will be introduced during the school year (timing TBD). Students may earn SkillsUSA leadership opportunities, including participation in Boeing's spring riveting assembly competition.

ACADEMIC INTEGRITY & GENERATIVE AI

Students are expected to submit only their own work and avoid cheating, plagiarism, fabrication, or other academic dishonesty. This includes submitting answers that are not your own on quizzes or exams, using unauthorized devices or materials, unauthorized communication during testing, or helping another person engage in academic dishonesty. Accidental or intentional use of another person's work, ideas, research, or writing without attribution may result in a failing grade on the assignment or, depending on the nature and extent of the violation, a failing grade in the course.

All students seeking CTE Dual Credit with Skagit Valley College are also responsible for knowing and adhering to the SVC Academic Honor Code (skagit.edu/honorcode). Violations — including cheating, plagiarism, aiding academic dishonesty, fabrication, lying, bribery, and threatening behavior — are reported to the student conduct officer and may result in academic consequences up to failure of the course, as well as college disciplinary sanctions up to expulsion.

Generative AI tools (for example, ChatGPT, DALL-E, Gemini, or Claude) may be used to generate ideas and organize thoughts when permitted by the instructor, but they should not replace student work. Students are responsible for analyzing and fact-checking AI-generated results. AI use should be minimal, appropriate to the assignment, and cited when used. Using AI to replace student work, using it for the majority of an assignment without permission, or failing to cite AI use when required will be treated as plagiarism.

ACCESSIBILITY, SYLLABUS CHANGES & NONDISCRIMINATION

Students with an IEP or 504 Plan who wish to earn college credit in this class through SVC should note that approved high school accommodations and modifications may not always apply to a class that also offers college credit. While both high schools and colleges must ensure that students with disabilities have equal access to educational opportunities, they are governed by different disability laws. **Students using a modified curriculum are not eligible to receive college credit.** Please reach out to SVC Disability Access Services for more information.

Changes to the Syllabus

I have attempted to make this syllabus as comprehensive and accurate as possible, and I may occasionally need to make small adjustments during the term. I will announce any changes in class or notify students in writing, with an updated syllabus posted to the NCTA website.

Equal Opportunity and Title IX Nondiscrimination – SVC

Skagit Valley College does not discriminate based on, but not limited to, race, color, national origin, citizenship, ethnicity, language, culture, age, sex, gender identity or expression, sexual orientation, pregnancy or parental status, marital status, actual or perceived disability, use of service animal, economic status, military or veteran status, spirituality or religion, or genetic information in its programs, activities, or employment.