

Core Plus Maritime
2026–2027

Instructor	Mr. Brent Moore	Email	cmoore@nwtech.k12.wa.us
Phone	360-484-0706	Course Hours	Session 1: 8:00–10:30 Session 2: 11:30–2:00
Location	Northwest Career & Technical Academy (NCTA)	Website	https://www.nwtech.k12.wa.us
CIP Code / Framework	CIP 47.0616 CIP 46.0200		

DUAL CREDIT / ARTICULATION INFORMATION

This class is a CTE Dual Credit class, articulated with Skagit Valley College's (SVC) Marine Maintenance Technology, AAS pathway. Students seeking to earn college credit must follow the CTE Dual Credit application and enrollment processes using this site for guidance: [Apply for Dual Credit](https://www.skagit.edu/academics/high-school-programs/cte-dual-credit/apply.html) (<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 (below). Students cannot obtain credit retroactively.

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

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

YEARLONG COURSE CTE DUAL CREDIT TASKS & DEADLINES

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

Institution	College Course & Number	Credits
Skagit Valley College (SVC)	MT 105 — Safety, Tools & Fastenings	3 college credits (22 college hrs / 90–120 HS hrs)
Skagit Valley College (SVC)	MT 102 — Marine Applied Mathematics	5 college credits (55 college hrs / 90–120 HS hrs)

Both courses are articulated through the Marine Maintenance Technology, AAS pathway. Renewal on file: MT 105, 1/21/2022–6/30/2029; MT 102, 1/12/2022–6/30/2029.

Dual-credit eligibility: Students must earn a final grade of B (3.0) or higher in all courses required by the articulation agreement and complete all required skills/competencies identified on the applicable SVC competency profile.

High School Credit Opportunities

Credit Area	Credits	Notes
Applied Lab Science	1.0	Awarded upon successful completion of program science competencies
Applied Math	1.0	Awarded upon successful completion of program math competencies
Occupational Education	1.0	Awarded upon successful completion of employability standards

Recommended for 11th and 12th graders with at least two years of high school math and science.

COURSE DESCRIPTION & LEARNING OUTCOMES

NCTA Course Description

The Core Plus Maritime Program is a year-long, 540-hour Career & Technical Education (CTE) program designed to prepare students for entry-level employment and post-secondary training in the marine service side of the maritime industry. The program partners with Yacht Manufacturers, Service Yards, Ship Yards, State Ports, and other marine service businesses to connect classroom and lab instruction to real, local industry practice through frequent field practicums, industry tours, and guest speakers.

The year opens with a shared Workplace Professionalism intro week alongside NCTA's Core Plus Aerospace Manufacturing and Core Plus Construction programs, establishing the professional expectations used across all three programs for the rest of the year. Students then progress through four major instructional units: the scope of the maritime industry, boating safety, and maritime careers, including the Washington State Boater Safety Card (Unit 1); marine composites, including material science, tool safety, precision measurement, and hand lamination/repair of fiberglass (Unit 2); basic marine 12-volt electrical systems, applied math, and career-readiness/mock interview preparation (Unit 3); and outboard servicing, including Yamaha certification (Unit 4). Workplace Professionalism is reinforced throughout every unit, not just the intro week. See Major Units, Assignments & Assessments below for the full unit-by-unit breakdown.

Students will engage in both classroom instruction and hands-on lab experiences designed to simulate real-world maritime workplace environments. Safety, professionalism, technical accuracy, and teamwork are emphasized daily. Successful completion requires mastery of academic content, lab competencies, and professional employability standards.

College Core / Course Learning Outcomes

This course is articulated with Skagit Valley College's Marine Maintenance Technology, AAS pathway through two courses: MT 105 (Safety, Tools & Fastenings) and MT 102 (Marine Applied Mathematics). The course covers all college learning outcomes identified in the articulation agreement:

MT 105 — Safety, Tools & Fastenings

- Demonstrate safe and proper hand and power tool use by following manufacturer guidelines and procedures.
- Identify, select, and install common fastener types using accepted industry practices and techniques.
- Select and apply adhesives and bedding compounds using correct product procedures.
- Exhibit safe & proficient working practices.

MT 102 — Marine Applied Mathematics

- Perform standard mathematic operations with whole numbers, fractions and decimals.
- Solve practical problems involving ratios, proportions, and percentages in the marine trades.
- Utilize basic trigonometric functions to solve practical problems in the marine trades.
- Calculate areas, volumes, and forces in both English and Metric systems.

Required Technical / Instructional Competencies

- Demonstrate safe work practices aligned with OSHA/WISHA standards, and earn OSHA-10 certification (Vector Solutions)
- Earn the Washington State Boater Safety Card through the Washington Basic Boating Safety Course (Chapters 1–6) and licensing exam
- Describe the scope of the maritime industry and its marine service sector, including yacht manufacturing, service yards, ship yards, and state ports
- Apply mathematical reasoning to maritime industry applications: percentages, fractions, ratios, and Ohm's Law / Watt's Law
- Perform precision measurement and tolerance verification
- Identify and select appropriate marine materials
- Demonstrate proper use of shop tools and marine equipment, including band saw, drill press, angle grinder, and miter saw safety
- Apply marine composite material science: safe handling of resin/MEKP/gel coat (per MSDS), mold release application, basic gel coat application, and hand lamination of fiberglass/carbon fiber
- Calculate and execute a basic 12:1 scarf repair
- Apply Ohm's Law and Watt's Law to series, parallel, and series-parallel 12V circuits
- Use a multi-meter for basic electrical measurement and diagnosis
- Terminate wire using butt connectors and heat shrink; test and diagnose relays
- Complete Yamaha Intro to Outboards (ITOS) course and certification, including hands-on outboard service

- Service an outboard motor: impeller/sea water pump service, pull string/recoil spring change, carburetor R&R and rebuild, parts identification, and spark plug testing
- Practice quality control and quality assurance processes
- Exhibit professional workplace behaviors and leadership skills; prepare a resume and cover letter and participate in a mock interview with an industry partner

BOOKS, MATERIALS & COURSE RESOURCES

All required materials, supplies, PPE, tools, and equipment for this program — including safety gear, lab and shop tools, composite materials, electrical lab equipment, outboard motors, the 3-ring binder, and OSHA-10 course access — are provided by NCTA at no cost to the student. Students are not required to purchase or supply their own materials.

Relevant resource details, assignments, and communications are posted in Skyward, Canvas, and/or ParentSquare as applicable.

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 Credit	Math Credit
Employability – 60%	Labs – 40%	Labs – 40%
Safety Quizzes – 30%	Weekly Quizzes – 30%	Weekly Quizzes – 30%
Practice – 10%	Practice Work – 15%	Practice Work – 15%
	Binder Checks – 15%	Binder Checks – 15%

NCTA Course Grade Scale

Grade	%	Grade	%
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% and below

CTE Dual Credit Minimum Grade & GPA Conversion

Students must earn a B or higher to earn CTE Dual Credit through Skagit Valley College. The partner-college template uses the following 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

Letter Grade	% of Points	GPA
D	65–66	1.0
F	0–64	0.0
MAJOR UNITS, ASSIGNMENTS & ASSESSMENTS		

The 540-hour Core Plus Maritime framework is organized around four major instructional units, sequenced below. Units are not tied to school quarters — pacing may run longer or shorter than a quarter depending on industry partner availability, weather, and lab needs. Workplace Professionalism and applied math are reinforced throughout every unit.

Unit	Focus	Key Topics, Labs & Assessments
Intro Week	Workplace Professionalism (Shared)	- Shared intro week taught jointly with Core Plus Aerospace Manufacturing and Core Plus Construction: class rules, team-building, growth vs. fixed mindset, and the RESPECT / Workplace Professionalism categories. - Scenario skits on real workplace situations: conflict resolution, harassment/bullying, professionalism, hygiene, and appropriate workplace conduct. - Reinforced throughout the rest of the year via the Professional Expectations Rubric — not a one-time unit.
Unit 1	The Maritime Industry	- Introduction to the scope of the maritime industry: maritime vocabulary and jargon, boat anatomy and nautical terminology, maritime careers, maritime history (Age of Exploration, the Jones Act, polar exploration), and current issues (Arctic geopolitics, desalination, aquaculture). - Washington Basic Boating Safety Course, Chapters 1–6 (boating equipment, trip planning, safe operation, emergency preparation, boating activities), culminating in the Washington State Boater's License practice test and exam. - Knot-tying and rope handling (bowline, anchor knot, round turn and two half-hitches); Rope Checkout. - Field practicums: Marina Walking Tour, Port of Anacortes Walking Tour, Port of Anacortes Tour with Brad Johnson, Island Adventures Whale Boat Tour, and a WAVE field practicum. 1st-Year Binder Check and Student-Led Conferences.
Unit 2	Marine Composites	- Core Plus Maritime Material Science as applied to marine composites; MSDS-based safety instruction and quizzes for resin, MEKP, gel coat, acetone, and polyvinyl alcohol. - Shop tool safety instruction and assessment: angle grinder, drill press, and miter saw, plus the Drill Block precision-drilling skill lab. - Applied math integrated throughout: percentages, ratios, and fraction operations in resin/gel coat/fiberglass mixing and application, building to comprehensive fraction and ratio assessments. - Mold release application; basic gel coat application; basic hand lamination of fiberglass/carbon fiber; basic 12:1 scarf repair (calculation and sanding). - Labs: Resin Initiation, Fiber Cutting, Composite Layup, Repair Gel Coat, Composite Repair Layup, Composite Repair Prep, Damage Repair, Replacement Repair, and the culminating Clipboard Layup and Final (fiberglass clipboard project, scored with a rubric). - Industry connection: a composite/marine manufacturer research project, guest speaker, and field practicums (WT Preston Walking Tour, Seattle Yachts walk, Aspen Power Catamaran Tour). - Continued Workplace Professionalism.

Unit	Focus	Key Topics, Labs & Assessments
Unit 3	Marine 12V Electrical	- Basic electricity concepts (current vs. voltage); Ohm's Law and Watt's Law applied to series, parallel, and series-parallel circuits. - Shop tool safety: belt & disc sander. Multi-meter use and application; relay testing and diagnosis; wire splicing, stripping/crimping, and heat-shrink termination; wiring schematic symbols. - Labs: Wire Splice, Heat Shrinking, Schematic Symbols, Wire Pull Test, Resistance, Battery Voltage, High Voltage (AC) Measurements, 12 Volt Relay, Wiring a Bilge Pump Switch, In-Line DC Measurements, Start Battery Testing, and Series/Parallel Wiring. - Industry connection: a marine electronics manufacturer research project and field practicums (Aspen Power Catamaran Tour, Lindell Yachts Tour). - Career readiness: resume and cover letter writing, interview skills, and preparing for Mock Interviews with industry partners, culminating in an in-person Mock Interview day.
Unit 4	Outboard Servicing	- Yamaha Intro to Outboards (ITOS) course registration and certification, including a required student logbook. - Outboard motor identification and parts identification; two- vs. four-stroke engines; lower units and cooling systems; fuel systems; ignition systems; winterization and maintenance. - Shop tool safety: band saw. Carburetor theory, R&R, and rebuild; sea water pump service; recoil starter R&R; spark plug wire testing. - Labs: Outboard Identification #1 & #2, Carburetor R&R, Carburetor Rebuild, Sea Water Pump, Recoil Starter R&R, Spark Plug Wire Testing, and Parts Identification. - Field practicums and guest speakers: North Harbor Diesel walking trip, Dakota Creek Industries tour, Munson/Mavrik/La Conner Maritime tour, Anacortes Boat Show, Blue Tech by the Bay, and industry guest speakers.

Industry Recognized Credentials (IRCs)

- Core Plus Maritime Foundational Certificate of Completion
- Washington State Boater Safety Card (Unit 1)
- Yamaha Intro to Outboards (ITOS) Certification (Unit 4)
- OSHA-10 Certification, Vector Solutions (year-long)

Major Assessments

Students are assessed weekly on current instructional units, with due dates communicated at least one week in advance. Each unit includes hands-on lab assessments and knowledge quizzes tied to that unit's competencies (e.g., the Boater's License exam in Unit 1, the fiberglass clipboard project and comprehensive fraction/ratio assessments in Unit 2, Ohm's Law and series/parallel circuit assessments in Unit 3, and outboard servicing labs in Unit 4).

Leadership Opportunities

Leadership opportunities are available through Career & Technical Student Organizations (CTSOs) and maritime industry partnerships, including Unit 3 Mock Interviews with industry partners. Students who consistently perform at the "Highly Sought Out Candidate" level on the Professional Expectations Rubric may earn Highly Sought After Maritime Professional Status at the end of the year.

Other Information — Practicums & Industry Exposure

Industry tours, field practicums, guest speakers, and mock interviews are integrated into the program and are considered instructional days; professional conduct is required at all times. Where a field practicum is not accessible to a student, an alternate assignment (e.g., a comparable video, article, or research essay) is provided.

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. Students earn up to 2 points daily (10 points weekly) toward their Attendance & Professionalism grade: 2 points for being present, on time, and communicating properly if absent; 1 point for a tardy or incomplete communication; 0 points for an unexcused absence or excessive tardiness. Because of the hands-on, cumulative nature of instruction, poor attendance may result in removal from the program. If a problem arises with health, food, transportation, housing, or any other barrier, please contact the school or district so support can be provided.

NCTA Professional Expectations (Behavioral)

Students are expected to follow applicable laws and behavior expectations of the school district, NCTA, and the program. Core Plus Maritime students are treated as professionals-in-training and are held to industry-aligned, non-negotiable standards: respect for everyone at all times, required use of PPE, mandatory attendance, and a team-first mindset — we succeed and fail as a team.

Professional Expectations Rubric

Students are evaluated across six core professionalism categories at three performance levels — Unemployable, Employable, and Highly Sought Out Candidate — consistent with the NCTA Core Plus Maritime Professionalism Rubric:

Category	Unemployable	Employable	Highly Sought Out Candidate
COMMUNICATIVE <u>Be Proactive</u> <i>Keep in touch · Ask for help · Watch your words</i>	- Does not communicate about absenteeism, even after reminders - Avoids problem-solving: stays stuck - Uses unprofessional language, despite reminders	- Communicates about absenteeism, as directed or responsive - Focuses on problem-solving with occasional guidance on methods - Uses professional language, as directed	- Always communicates absenteeism in advance - Clarifies problems and finds solutions, seeking assistance when required - Uses professional language at all times
MOTIVATED <u>Be Valued</u> <i>Do your best · Volunteer · Meet deadlines</i>	- Rarely puts forth best effort for assignments and tasks - Does not attend extra-curricular events, despite availability - Does not manage time well, frequently missing deadlines	- Puts forth good effort for almost every assignment and task - Attends some extra-curricular events as part of leadership in learning - Generally manages time well, but sometimes requires additional time	- Puts forth best effort, above and beyond, for assignments and tasks - Attends all extra-curricular events as part of leadership in learning - Manages time consistently well, so tasks get done on time
RELIABLE <u>Be Present</u> <i>Always attend · Be punctual · Be consistent</i>	- Exceeds professional leave - Tardy repeatedly or to a great degree - Does not engage in all classwork, despite reminders	- Does not exceed professional leave - Tardy once or twice or to a small degree - Engages with all classwork, with occasional prompting	- Present daily - On time daily without prompting - Engages in all activities, assignments and labs as a self-starter - Initiates and engages with industry-related professionals
RESPONSIBLE <u>Be Caring</u> <i>Keep it tidy · Stay focused · Dress to impress</i>	- Repeatedly prompted to keep classroom and lab neat, clean and orderly - Repeatedly reminded to stay on task - Not dressed professionally, despite reminders	- Keeps classroom and lab neat, clean and orderly, as per instructions - Stays on task with occasional reminders - Dresses professionally with occasional reminders, including hygiene	- Keeps classroom and lab neat, clean and orderly, as per policy - Stays on task without prompting - Dresses professionally, according to the class and PPE standards, including hygiene
TEAM MEMBER <u>Be Inclusive</u> <i>Work with all members · Be friendly · Know when to lead · Know when to follow</i>	- Requires persuasion to contribute to team work exercises - Often presents a negative attitude with classmates, instructors and/or visitors - Non-compliance of procedures and protocols, even after reminders	- Contributes in a positive way during team work exercises - Usually displays a positive attitude with classmates, instructors and visitors - Follows procedures and protocols, as directed	- Takes a leadership role during team work exercises, acknowledging limits and taking actions appropriate to gain knowledge or skill - Always displays a positive attitude with classmates, instructors and visitors - Follows procedures and protocols as per class or NCTA policy
TRUSTWORTHY <u>Be Ethical</u> <i>Take care · Be intentional · Strive for honesty · Demonstrate integrity</i>	- Disrespects supplies, equipment and property, despite reminders - Redirected multiple times for misuse of technology - Lacks integrity, through purposeful plagiarism or lack of best practice	- Properly uses supplies, equipment and property, as directed - Uses technology in an appropriate manner, as directed - Has integrity with occasional guidance on best practice	- Cares for equipment and property, according to the class standards - Uses technology in an appropriate manner, as per policy - Embraces integrity always

A seventh NCTA expectation, Feedback / Coachable, applies across all units: students are expected to receive feedback professionally and use it to improve performance.

Late Work Policy

Late work receives full credit only with an excused absence. Students are responsible for requesting missed work. Personal accountability is an industry expectation.

INDUSTRY / COURSE-SPECIFIC ITEMS

Item	Details
Safety / PPE Requirements	Safety glasses, ear protection, lab coat, dust mask, and disposable gloves are required in lab settings. Dress code follows industry standards: full-length pants, closed-toed shoes (no slippers), durable shop clothing, no loose or baggy clothing, no loose jewelry, and long hair tied back. Failure to follow dress code may result in removal from lab activities.
Class Uniform	Beginning this school year, NCTA has implemented class uniforms. The class uniform is required to be worn at all times unless the instructor directs otherwise.
Field Trips / Clinical / Worksite Learning Expectations	Unit 1 includes a Marina Walking Tour, Port of Anacortes tours, an Island Adventures Whale Boat Tour, and a WAVE field practicum. Unit 2 includes the WT Preston Walking Tour, a Seattle Yachts walk, and an Aspen Power Catamaran Tour. Unit 3 includes an Aspen Power Catamaran Tour, a Lindell Yachts Tour, and preparation for and participation in Mock Interviews with industry partners. Unit 4 includes walking trips/tours to North Harbor Diesel, Dakota Creek Industries, and Munson/Mavrik/La Conner Maritime, plus the Anacortes Boat Show and Blue Tech by the Bay. Guest speakers are scheduled periodically throughout the year. Industry tours, field practicums, and guest speakers are considered instructional days, and professional conduct is required at all times. An alternate assignment is provided where a field practicum is not accessible to a student.
Technology / Device Expectations	Personal devices (phones, tablets, headphones, etc.) are only to be used when directed by the instructor for a specific classroom or lab activity. Outside of instructor-directed use, personal devices should remain put away.
Communication / Office Hours / Help	Extra help is available before or after class by request. Asking for help demonstrates professionalism and initiative — both highly valued industry traits.
Additional Program-Specific Policies	Students who consistently perform at the "Highly Sought Out Candidate" level on the Professional Expectations Rubric may earn Highly Sought After Maritime Professional Status. Students also work toward the Washington State Boater Safety Card, Yamaha Intro to Outboards Certification, and OSHA-10 Certification over the course of the year.

ACADEMIC INTEGRITY & GENERATIVE AI

Academic Integrity

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. Students participating in articulated college credit through Skagit Valley College must also adhere to the academic honor code standards established by SVC.

Generative AI Expectations

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

Accessibility

Northwest Career & Technical Academy is committed to full classroom participation for all students. Students who need accommodations should contact their case manager or counselor, and instructional materials and activities will be adapted as needed in accordance with each student's IEP or 504 Plan.

SVC-Articulated Courses — Required Accessibility Language

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 the SVC Disability Access Services for more info: <https://www.skagit.edu/student-resources/disability-access-services/>

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.

Nondiscrimination — NCTA

Northwest Career & Technical Academy does not discriminate based on 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 a service animal, economic status, military or veteran status, spirituality or religion, or genetic information in its programs, activities, or employment.