Revised–June 2024

Transportation, Distribution, and Logistics Career Cluster

The Transportation, Distribution, and Logistics career cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes transportation infrastructure planning and management, logistics services, and mobile equipment and facility maintenance. This career cluster includes occupations ranging from automotive mechanic, avionics technician, and automotive entrepreneur to pilots and logistics planning professionals.

Regional Program of Study: Maritime

Approved Regional Program of Study

***The list of approved ESC regions is updated every school year, be sure to check the CTE regional program of study website for updates.**

The Maritime regional program of study focuses on educational and occupational opportunities associated with the operation of water vessels. This program of study includes maintenance procedures and operation of maritime navigational aids, maritime traffic controls, and communications equipment to ensure conformance with federal safety regulations.

Offered to: LMHS and TCHS at the Industrial Trades Center

Secondary Courses for High School Credit

Level 1	• Principles of Maritime Science
Level 2	• Introduction to Shipboard Engineering • Maritime Science I
Level 3	• Maritime Science II (Required) • Advanced Shipboard Engineering (Required) • Applied Mathematics for Technical Professionals (Recommended)
Level 4	• Practicum in Distribution and Logistics

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Shadow at a maritime port to learn about maritime traffic control • Participate in a pre-apprenticeship with a government agency (such as U.S. Coast Guard) working closely with ship engineers
Expanded Learning Opportunities	• Participate in SkillsUSA • Tour various maritime vessels

Aligned Industry-Based Certifications

- Certified Logistics Technician (CLT)

Example Postsecondary Opportunities

Apprenticeships
- Maritime Apprenticeship Program (MAP)

Associate Degrees
- Logistics
- Transportation and Mobility Management

Bachelor's Degrees
- Logistics and Supply Chain Management
- Maritime Transportation

Master's, Doctoral, and Professional Degrees
- Logistics
- Transportation and Mobility Management

Additional Stackable IBCs/License
- Limited Tonnage Workboat Mate

Example Aligned Occupations

Sailors and Marine Oilers
Median Wage: $69,299
Annual Openings: 329
10-Year Growth: 10%

Motorboat Operators
Median Wage: $40,223
Annual Openings: 83
10-Year Growth: 14%

Captains, Mates, and Pilots of Water Vessels
Median Wage: $102,803
Annual Openings: 293
10-Year Growth: 13%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.

For more information visit: https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources

Successful completion of the Maritime regional program of study will fulfill requirements of the Business and Industry endorsement.

Texas Education Agency

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Course Information

Level 1

Course	Prerequisites | Corequisites	Local Course #
Principles of Maritime Science N1304661 (1 credit)	**Prerequisites:** None **Corequisites:** None **Required: Drug testing is mandatory for this course**	7783
This course is designed to instruct students in the principles of maritime science as outlined by the Code of Federal Regulations (CFR) directly related to the National Maritime Center and the Merchant Mariner Credentialing Program.		

Level 2

Course	Prerequisites | Corequisites	Local Course #
Introduction to Shipboard Engineering N1304666 (1 credit)	**Prerequisites:** Principles of Maritime Science **Corequisites:** Maritime Science I **Required: Drug testing is mandatory for this course**	7861
Introduction to Shipboard Engineering is designed to provide training for entry-level employment and/or a basis for continuing education in shipboard engineering and merchant mariner credentialing. This course will build on the foundational knowledge previously acquired in the Principles of Maritime Science course. Shipboard engineering includes knowledge of the functions, troubleshooting, maintenance and repair of the systems and components of maritime engines such as centrifuge engines, outboards, and portable dewatering pumps. In addition, students will receive instruction in safety, emergency procedures, and shipboard auxiliary systems.		
Maritime Science I N1304662 (1 credit)	**Prerequisites:** Principles of Maritime Science **Corequisites:** Introduction to Shipboard Engineering **Required: Drug testing is mandatory for this course**	7784
This course provides training for entry-level employment and a basis for continuing education in deck and piloting careers and merchant mariner credentialing. This course instructs students in progressing aspects of vessel piloting and navigation, safety of life at sea, voyage planning, shipboard damage control, and marine pollution.		

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Regional Program of Study: Maritime

Course Information

Level 3

Course	Prerequisites | Corequisites	Local Course #
Maritime Science II N1304663 (1 credit)	**Prerequisites:** Maritime Science I **Corequisites:** Advanced Shipboard Engineering **Recommended Corequisite:** Applied Mathematics for Technical Professionals **Required: Drug testing is mandatory for this course**	7884
Students will develop new skills such as advanced navigation coordination, collision avoidance, briefing the command, electronic navigation theory, basic, routine and emergency ship handling procedures, and external communications.		
Advanced Shipboard Engineering N1304667 (1 credit)	**Prerequisites:** Introduction to Shipboard Engineering **Corequisites:** Maritime Science II **Recommended Corequisite:** Applied Mathematics for Technical Professionals **Required: Drug testing is mandatory for this course**	7862
The Advanced Shipboard Engineering course includes advanced knowledge of the function, design, and relationships of the systems and components of propulsion and habitability systems. This course will build on knowledge and skills established in the Principles of Maritime Science and Introduction to Shipboard Engineering courses. This course is designed to provide advanced training for employment, licensures, or post-secondary degree programs in the shipboard engineering industry. Instruction includes functions and components of cooling, fuel, lubricating, electrical, air conditioning and refrigeration, propulsion, and mechanical systems of maritime diesel engines. In addition, the students will receive instruction in safety, engine instruments, and environmental compliance.		
Applied Mathematics for Technical Professionals 12701410 (1 credit)	**Prerequisites:** Electrical Technology I **Corequisites:** None **Recommended Corequisite:** Maritime Science II and Advanced Shipboard Engineering	7925
Applied Mathematics for Technical Professionals uses problem-solving situations, hands-on activities, and technology to extend mathematical thinking and engage student reasoning. Situations relating to technical applications provide students opportunities to make connections with mathematics and the workplace. In addition, students will learn the skills necessary to communicate using mathematics. Hands-on activities will allow students to model, explore, and develop abstract concepts applicable to technical careers.		

Level 4

Course	Prerequisites | Corequisites	Local Course #
Practicum in Distribution and Logistics 13040470 (2 credits)	**Prerequisites:** Maritime Science II, Advanced Shipboard Engineering **Corequisites:** None **Required: Drug testing is mandatory for this course**	7885
Practicum in Distribution and Logistics is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or work based.		

For additional information on the **Transportation, Distribution, and Logistics** career cluster, contact cte@tea.texas.gov or visit https://tea.texas.gov/cte