

MARINE TRANSPORTATION (BS)

The student choosing a career as a licensed deck officer (mate) or a shoreside maritime manager majors in marine transportation. This major provides the broadest maritime industry training possible consistent with officer licensing requirements.

Marine transportation graduates have a broad employment field open to them. A wide variety of shoreside management positions await the graduate in numerous maritime sectors, including vessel operations, ship’s agency, marine insurance, stevedoring, charter brokering, and federal employment, as well as shipboard employment opportunities.

The MT curriculum includes three practical training experiences: two sea training periods aboard the *Training Ship GOLDEN BEAR*, and one sea training period aboard a commercial or military vessel. This major, through the wide array of professional skills taught, is designed to prepare the student to take the U.S. Coast Guard Merchant Marine Officer licensing exam (<https://maritime-archive.calpoly.edu/web/coast-guard-licensing/3rds/>). Passing this examination, which results in the issuance of a Third Mate’s license, is essential for a student seeking employment as a licensed deck officer on a commercial vessel and is required to earn the marine transportation degree.

Deck Licenses

Deck licenses issued by the U.S. Coast Guard increase in rank as follows: Third Mate, Second Mate, Chief Mate, and Master. A raise in grade is dependent upon the graduate’s ability to accumulate sea time, usually one year’s sea time in each license category, and to pass USCG examinations of increasing complexity and difficulty.

Program Learning Objectives

1. Plan and execute safe voyages using terrestrial, celestial, radar/ARPA, and ECDIS methods, integrating tides, currents, and weather.
2. Maintain a safe bridge watch applying COLREGs, GMDSS procedures, and effective Bridge Resource Management (BRM).
3. Demonstrate leadership, professionalism, ethical judgment, and clear communication in complex and diverse environments.
4. Maneuver vessels and small craft for berthing, anchoring, close-quarters operations, including introductory tug-and-barge work.
5. Analyze stability and plan/monitor dry and liquid cargo operations with pollution-prevention controls.
6. Apply shipboard safety, security, and emergency-response procedures and lead effective drills.
7. Meet licensure requirements by interpreting and applying maritime regulations (SOLAS, MARPOL, STCW) and demonstrating readiness for the U.S. Coast Guard Third Mate (Unlimited) exam.

Degree Requirements and Curriculum

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (<https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/>) section of this catalog, including:

- 40 units of upper-division courses
- 2.0 GPA
- Graduation Writing Requirement (GWR)
- U.S. Cultural Pluralism (USCP)

Note: No Major, Support or Concentration courses may be selected as credit/no credit. In addition, no more than 12 units of cooperative or internship courses can count towards your degree requirements.

Code	Title	Units
MAJOR COURSES		
DL 1100	Small Craft Operations	1
DL 1105 & 1105L	Marine Survival and Marine Survival Laboratory	2
DL 1105X	United States Coast Guard Lifeboatman’s Exam	0
DL 1110	Ship Operations I	1
DL 1115	Marlinspike	1
DL 1120	Cargo Operations	1
DL 2225 & 2225L	Radar/Arpa and RADAR/ARPA Laboratory	4
DL 2240 & 2240L	Global Maritime Distress Safety System (GMDSS) and Global Maritime Distress Safety System (GMDSS) Laboratory	3
DL 3301	Navigation Piloting Laboratory	1
DL 3305	Tug and Barge	1

DL 3310	Marine Supervisory Laboratory	1
DL 3311	Marine Management Laboratory	1
DL 3320	Introduction to Bridge Simulator	2
DL 4405 & 4405L	Shipboard Medical and Shipboard Medical Laboratory	2
DL 4410	Ship Handling	1
DL 4420	Watchstanding Simulation	2
NAU 1102 & 1102L	Navigation I and Navigation I Laboratory	4
NAU 1103	Marine Transportation	3
NAU 1104	Shipboard Security and Responsibility	1
NAU 1105	Ship Structure	2
NAU 1109	Industrial Equipment and Safety	2
NAU 1110	Seamanship	3
NAU 1120	Marine Engineering	3
NAU 2205	Ship Stability (2) ¹	3
NAU 2230	Rules of the Road	2
NAU 3300 & 3300L	Celestial Navigation and Celestial Navigation Laboratory	4
NAU 3302 & 3302L	Advanced Navigation and Advanced Navigation Laboratory	3
NAU 3320	Tank Vessel Operations	3
NAU 3325	Port and Cargo Operations	3
NAU 3330	Meteorology (Upper-Division 2/5) ¹	3
NAU 3335 & 3335L	Electronic Chart Display and Information Systems and Electronic Chart Display and Information Systems Laboratory	3
NAU 4410 & 4410L	License Seminar and License Seminar Laboratory	2
NAU 4415	Transportation Security	2
NAU 4435	Marine Transportation: People, Planet and the Profession	3
Approved Electives		
Select from the following:		6
NAU 3395	Special Topics	
NAU 4420	Maritime Casualty Seminar	
NAU 4430/NAU 4430L	Liquefied Gas Cargos	
NAU 4440	Dynamic Positioning Induction	
SUPPORT COURSES		
CRU 1100	Sea Training I - Deck	8
CRU 2200 & 2200L	Sea Training II - Deck and Sea Training II Lab (Deck)	8
CRU 3300	Sea Training III - Deck	8
ECO 1100	Macroeconomics (4B) ¹	3
EGL 1100	English Composition (1A) ¹	3
EGL 1110	Speech Communication (1C) ¹	3
EGL 2220	Critical Thinking (1B) ¹	3
ENG 1120L	Marine Engineering Laboratory	1
FF 1100	Basic Marine Firefighting	0
FF 3300	Advanced Marine Firefighting	0
GOV 2200	American Government (4A) ¹	3
MTH 1100	College Algebra and Trigonometry	4
LAW 3315	Admiralty Law (Upper-Division 4) ¹	3
PE 1101	Swim Competency Exam ²	0

PHY 1100 & 1100L	General Physics I and General Physics I Laboratory (5A & 5C) ¹	4
GENERAL EDUCATION (GE)		
(See GE program requirements below)		15
FREE ELECTIVES		
Free Electives		0
Total Units		145

¹ Required in Major or Support; also satisfies General Education (GE) requirement.

² Swim assessments are required of all cadets during Orientation week. If PE 1101 is not passed with a grade CR, then enrollment in PE 1102 will be required.

General Education (GE) Requirements

General Education (GE) Requirements

- 43 units required, 28 of which are specified in Major and/or Support.
- If any of the remaining 15 Units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (<https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: 1A (English Composition), 1B (Critical Thinking), 1C (Oral Communication), and 2 (Mathematics and Quantitative Reasoning).

Lower-Division General Education

Area 1	English Communication and Critical Thinking	
1A	Written Communication (3 units in Support) ¹	0
1B	Critical Thinking (3 units in Support) ¹	0
1C	Oral Communication (3 units in Support) ¹	0
Area 2	Mathematics and Quantitative Reasoning	
2	Mathematics and Quantitative Reasoning (3 units in Support) ¹	0
Area 3	Arts and Humanities	
3A	Arts	3
3B	Humanities: Literature, Philosophy, Languages other than English	3
Area 4	Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.)	
4A	American Institutions (Title 5, Section 40404 Requirement) (3 units in Support) ¹	0
4B	Social and Behavioral Sciences (3 units in Support) ¹	0
Area 5	Physical and Life Sciences	
5A	Physical Sciences (3 units in Support) ¹	0
5B	Life Sciences	3
5C	Laboratory (may be embedded in a 5A or 5B course) (1 units in Support) ¹	0
Area 6	Ethnic Studies	
6	Ethnic Studies	3
Upper-Division General Education		
Upper-Division 2/5	Mathematics and Quantitative Reasoning or Physical and Life Sciences (3 units in Support) ¹	0
Upper-Division 3	Arts and Humanities	3
Upper-Division 4	Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.) (3 units in Support) ¹	0

Total Units **15**

¹ Required in Major or Support; also satisfies General Education (GE) requirement.

Marine Transportation - Division 1 & 2

Division 1 & 2 - BS in Marine Transportation

Suggested Four-Year Flowcharts are planning guides and do not represent a required course sequence. Courses may be completed in a different order, provided requisite requirements are satisfied.

First Year

Term 1		Units
DL 1105 & 1105L	Marine Survival and Marine Survival Laboratory	2
DL 1105X	United States Coast Guard Lifeboatman's Exam	0
DL 1115	Marlinspike	1
NAU 1103	Marine Transportation	3
NAU 1104	Shipboard Security And Responsibility	1
NAU 1105	Ship Structure	2
NAU 1109	Industrial Equipment And Safety	2

EGL 1100	English Composition (1A) ¹	3
FF 1100	Basic Marine Firefighting	0
MTH 1100	College Algebra And Trigonometry	4
PE 1101	Swim Competency Exam ²	0
Units		18
Term 2		
DL 1100	Small Craft Operations	1
DL 1110	Ship Operations I	1
DL 1120	Cargo Operations	1
NAU 1102 & 1102L	Navigation I and Navigation I Lab	4
NAU 1110	Seamanship	3
ECO 1100	Macroeconomics (4B) ¹	3
EGL 1110	Speech Communication (1C) ¹	3
Units		16
Term 3		
CRU 1100	Sea Training I - Deck	8
Units		8
Second Year		
Term 1		
DL 2225 & 2225L	Radar/Arpa and RADAR/ARPA Laboratory	4
NAU 2230	Rules Of The Road	2
EGL 2220	Critical Thinking (1B) ¹	3
GOV 2200	American Government (4A) ¹	3
PHY 1100 & 1100L	General Physics I and General Physics I Laboratory (5A & 5C) ¹	4
Units		16
Term 2		
NAU 1120	Marine Engineering	3
NAU 2205	Ship Stability (2) ¹	3
NAU 3335 & 3335L	Ecdis and Ecdis Lab	3
ENG 1120L	Marine Engineering Lab	1
General Education Requirement (3A)		3
General Education Requirement (6)		3
Units		16
Term 3		
CRU 2200 & 2200L	Sea Training II - Deck and Sea Training II Lab (Deck)	8
Units		8
Third Year		
Term 1		
DL 2240 & 2240L	Global Maritime Distress Safety System and Global Maritime Distress Safety System Lab	3
DL 3301	Navigation Piloting Lab	1
DL 3310	Marine Supervisory Lab	1
NAU 3302 & 3302L	Advanced Navigation and Advanced Navigation Lab	3
NAU 3320	Tank Vessel Operations	3
NAU 3330	Meteorology (Upper-Division 2/5) ¹	3
FF 3300	Advanced Marine Firefighting	0
Units		14
Term 2		
DL 3311	Marine Management Lab	1
DL 3320	Intro To Bridge Simulator	2
NAU 3300 & 3300L	Celestial Navigation and Celestial Navigation Lab	4
NAU 3325	Port & Cargo Operations	3
General Education Requirement (5B)		3
General Education Requirement (Upper-Division 3, GWR)		3
Units		16

Term 3		
CRU 3300	Sea Training III - Deck	8
	Units	8
Fourth Year		
Term 1		
DL 4405 & 4405L	Shipboard Medical and Shipboard Medical Lab	2
DL 4410	Ship Handling	1
DL 4420	Watchstanding Simulation	2
NAU 4410 & 4410L	License Seminar and License Seminar Lab	2
Approved Elective		3
General Education Requirement (3B)		3
	Units	13
Term 2		
DL 3305	Tug And Barge	1
NAU 4415	Transportation Security	2
NAU 4435	Marine Transportation: People, Planet And The Profession	3
LAW 3315	Admiralty Law (Upper-Division 4) ¹	3
Approved Elective		3
	Units	12
	Total Units	145

¹ Required in Major or Support; also satisfies General Education (GE) requirement.

² Swim assessments are required of all cadets during Orientation week. If PE 1101 is not passed with a grade CR, then enrollment in PE 1102 will be required.

Marine Transportation - Division 3 & 4

Division 3 & 4 - BS in Marine Transportation

*Suggested Four-Year Flowcharts are planning guides and do not represent a required course sequence.
Courses may be completed in a different order, provided requisite requirements are satisfied.*

First Year

Term 1		Units
DL 1105 & 1105L	Marine Survival and Marine Survival Laboratory	2
DL 1105X	United States Coast Guard Lifeboatman's Exam	0
DL 1115	Marlinspike	1
NAU 1103	Marine Transportation	3
NAU 1104	Shipboard Security And Responsibility	1
NAU 1105	Ship Structure	2
NAU 1109	Industrial Equipment And Safety	2
EGL 1100	English Composition (1A) ¹	3
MTH 1100	College Algebra And Trigonometry	4
PE 1101	Swim Competency Exam ²	0
Units		18

Term 2		Units
DL 1100	Small Craft Operations	1
DL 1110	Ship Operations I	1
DL 1120	Cargo Operations	1
NAU 1102 & 1102L	Navigation I and Navigation I Lab	4
NAU 1110	Seamanship	3
ECO 1100	Macroeconomics (4B) ¹	3
EGL 1110	Speech Communication (1C) ¹	3
FF 1100	Basic Marine Firefighting	0
Units		16

Term 3		Units
CRU 1100	Sea Training I - Deck	8
Units		8

Second Year

Term 1		Units
DL 2225 & 2225L	Radar/Arpa and RADAR/ARPA Laboratory	4
NAU 2230	Rules Of The Road	2
EGL 2220	Critical Thinking (1B) ¹	3
GOV 2200	American Government (4A) ¹	3
PHY 1100 & 1100L	General Physics I and General Physics I Laboratory (5A & 5C) ¹	4
Units		16

Term 2		Units
NAU 1120	Marine Engineering	3
NAU 2205	Ship Stability (2) ¹	3
NAU 3335 & 3335L	Ecdis and Ecdis Lab	3
ENG 1120L	Marine Engineering Lab	1
General Education Requirement (3B)		3
General Education Requirement (6)		3
Units		16

Term 3		Units
CRU 2200 & 2200L	Sea Training II - Deck and Sea Training II Lab (Deck)	8
Units		8

Third Year

Term 1		Units
DL 2240 & 2240L	Global Maritime Distress Safety System and Global Maritime Distress Safety System Lab	3
DL 3310	Marine Supervisory Lab	1
NAU 3302 & 3302L	Advanced Navigation and Advanced Navigation Lab	3

NAU 3320	Tank Vessel Operations	3
NAU 3330	Meteorology (Upper-Division 2/5) ¹	3
FF 3300	Advanced Marine Firefighting	0
General Education Requirement (Upper-Division 3, GWR)		3
Units		16
Term 2		
DL 3301	Navigation Piloting Lab	1
DL 3311	Marine Management Lab	1
DL 3320	Intro To Bridge Simulator	2
NAU 3300 & 3300L	Celestial Navigation and Celestial Navigation Lab	4
NAU 3325	Port & Cargo Operations	3
General Education Requirement (5B)		3
Units		14
Term 3		
CRU 3300	Sea Training III - Deck	8
Units		8
Fourth Year		
Term 1		
DL 3305	Tug And Barge	1
DL 4420	Watchstanding Simulation	2
NAU 4410 & 4410L	License Seminar and License Seminar Lab	2
NAU 4415	Transportation Security	2
Approved Elective		3
General Education Requirement (3A)		3
Units		13
Term 2		
DL 4405 & 4405L	Shipboard Medical and Shipboard Medical Lab	2
DL 4410	Ship Handling	1
NAU 4435	Marine Transportation: People, Planet And The Profession	3
LAW 3315	Admiralty Law (Upper-Division 4) ¹	3
Approved Elective		3
Units		12
Total Units		145

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