



## UNDERGRADUATE DEGREE CURRICULA

For Students Entering  
Maritime College  
During  
2024-25 Academic Year

As of September 24,  
2024

## UNDERGRADUATE DEGREE CURRICULA

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\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

## DEGREE CURRICULA NOTES

A student is responsible for knowing when their required courses are offered, as shown in the published curricula and course descriptions. For some curricula, flow charts showing the sequencing of courses is also available (check with department offering your curriculum).

### General Remarks

Each degree curriculum in this document is provided as a reference showing all course requirements arranged in a model sequence. All bachelor's degrees leading to USCG licensure also require passing the relevant license exams.

A student's individual degree plan may divert from the published curriculum, but must take into account the following:

- A course may be offered only in certain semesters.
- Course prerequisites and corequisites must be honored.

The semester scheduling of course offerings is available in both this document and the accompanying course descriptions document. Course prerequisites/corequisites are available in the accompanying course descriptions document.

**Rules about Curriculum Changes** (Students are normally required to follow the policies below. Students may appeal in a timely fashion for waivers through the department chair and Provost.)

- 1. Grandfather clause:** A student is expected to complete their major curriculum as specified at the time of matriculation. A student may choose to follow a later curriculum, but the student must complete all of the requirements of that later curriculum.
- 2. Readmission rule:** A readmitted student follows the curriculum in effect at the time the student returns to studies. The only departure from the school that does not require readmission is an official leave of absence.
- 3. Change of major rule:** When a student changes major, they must change to the curriculum in effect at the time of the change.
- 4. Regulatory change rule:** If a regulatory body (such as the U.S. Coast Guard or ABET) institutes new requirements that change the student's curriculum, the student must complete the new requirements.

## DEFINITIONS FOR ELECTIVE CATEGORIES

A **Free Elective** is defined as any course (except ENGL 090-095 and MATH 080) *not required by the student's degree program*. The sum of credits earned through Free Electives must equal the total required for the given degree program. Pass/Fail courses cannot be used as Free Electives.

An **Engineering (ENGR) Elective** is defined as any one of the following courses, *not required by the student's degree program*: any course numbered ENGR 3xx, 4xx, 50x, 54x, or 6xx; CHEM 213, CHEM 301, CHEM 321, ES 420, ES 430, MATH 311, MATH 446, OCEA 308, OCEA 425, NVSC 304; and other courses with the Engineering Chair's approval.

A **Global Business and Transportation (GBAT) Elective** is defined as any one of the following courses, *not required by the student's degree program*: MT 350, MT 408, MT 430, MT 435, NVSC 201, all courses with the prefix GBAC, GBEC, GBLW, GBMG, GBTT, or GBUS.

A **Humanities (HUMN) Elective** is defined as any one of the following courses, *not required by the student's degree program*: CHIN 101 or higher; ENGL 300 or higher (except ENGL 452); HIST 300 or higher; HUMN 300 or higher; NVSC 102, 311 and 402; SPAN 101 or higher.

A **Law Elective** is any course from the following list, *not required by the student's degree program*: GBLW 431, GBLW 433, GBLW 435, GBLW 437, GBMG 348, HUMN 430, MT 404.

A **Liberal Arts & Sciences (LAS) Elective** is defined as any one of the following courses, *not required by the student's degree program*: CHIN 101 or higher; CS 301; ENGL 300 or higher (except ENGL 452); GBEC 121, 122, 424, 428; GBLW 435; HIST 300 or higher; HUMN 300 or higher; MATH 090 or higher; NVSC 102, 311 and 402; SPAN 101 or higher; SS 101 or higher; all courses with the prefix BIO, CHEM, ES, GEOL, METE, OCEA, or PHYS.

A **Marine Environmental Science (MES) Elective** is any BIO, ES, METE, or OCEA course numbered 300 or higher *not required by the student's degree program*.

A **Marine Transportation (MT) Elective** is any course from the following list, *not required by the student's degree program*: MT 212, MT 350, MT 404, MT 408, MT 430, MT 435, MT 450, NAUT 420, NAUT 476.

A **Physical Education (PE) Elective** is any course with the prefix PE *not required by the student's degree program*.

**B.E. in Electrical Engineering with Deck License**

## Fall Semester

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

## Spring Semester

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			19.5	

L	MT 510	Summer Sea Term I	6	
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## Lower Division - Sophomore Year

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
L	METE 201 <sup>+</sup>	Meteorology for Mariners	3	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	<b>ENGR 292<sup>+</sup></b>	<b>Digital Electronics</b>	4	
	MATH 212	Differential Equations	4	
	NAVG 212	Navigation II: Oceans	4	
L		General Education Elective**	3	
Semester Credits:			21	

L	MT 520	Summer Sea Term II	6		OR	L	MT 521	Cadet Comm Vessel Shipping	6	
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## Upper Division - Junior Year

	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 383</b>	<b>Signals &amp; Systems</b>	3	
	<b>ENGR 385</b>	<b>Instrumentation &amp; Measurement</b>	1	
	<b>ENGR 387<sup>+</sup></b>	<b>Analog Electronics</b>	4	
	<b>ENGR 394</b>	<b>Electromagnetic Fields</b>	3	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			19	

	ENGR 314	Engineering Economics	3	
	<b>ENGR 395<sup>+</sup></b>	<b>Electric Machines</b>	3	
	<b>ENGR 396</b>	<b>Machine Learning</b>	3	
	<b>ENGR 398<sup>+</sup></b>	<b>Control System Theory</b>	3	
L	MT 250	Ship Const & Stability (Unltd Lic)	2	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
Semester Credits:			20	

L	MT 530	Summer Sea Term III	5	
L	MTO 412	Medical Care Provider	1	

## Upper Division - Senior Year

	<b>ENGR 481</b>	<b>Communications Theory</b>	3	
	<b>ENGR 488<sup>+</sup></b>	<b>Electrical Design I</b>	3	
	<b>ENGR 490<sup>+</sup></b>	<b>Power Electronics &amp; Electric Drives</b>	4	
	ENGR 3xx	Engineering Technical Writing	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
		Free Elective	3	
Semester Credits:			19	

	<b>ENGR 489<sup>+</sup></b>	<b>Electrical Design II</b>	4	
	<b>ENGR 494</b>	<b>Intro Renewable Energy Resource</b>	3	
	<b>ENGR 497</b>	<b>AC &amp; DC Power Distribution Sys</b>	3	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
Semester Credits:			13	

## 9th Semester

		General Education Elective**	3	
L	MT 412	Deck License Seminar	4	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic)	3	
		Free Elective	3	
Semester Credits:			16	

USCG License Exam: 

Lower Division Credits: 87

Upper Division Credits: 93

License Credits (L in left column): 62

Total Credits: 180

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Electrical Engineering with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			17.5	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	<b>ENGR 292<sup>+</sup></b>	<b>Digital Electronics</b>	4	
L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			20	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 383</b>	<b>Signals &amp; Systems</b>	3	
	<b>ENGR 385</b>	<b>Instrumentation &amp; Measurement</b>	1	
	<b>ENGR 387<sup>+</sup></b>	<b>Analog Electronics</b>	4	
	<b>ENGR 394</b>	<b>Electromagnetic Fields</b>	3	
L	<b>ENGR 543<sup>+</sup></b>	<b>Ship Systems III</b>	3	
	ENGR 3xx	Engineering Technical Writing	3	
Semester Credits:			20	

	ENGR 314	Engineering Economics	3	
	<b>ENGR 395<sup>+</sup></b>	<b>Electric Machines</b>	3	
	<b>ENGR 396</b>	<b>Machine Learning</b>	3	
	<b>ENGR 398<sup>+</sup></b>	<b>Control System Theory</b>	3	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	4	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			18	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

L	ENGR 371	Applied Naval Architecture	3	
	<b>ENGR 481</b>	<b>Communications Theory</b>	3	
	<b>ENGR 488<sup>+</sup></b>	<b>Electrical Design I</b>	3	
	<b>ENGR 490<sup>+</sup></b>	<b>Power Electronics &amp; Electric Drives</b>	4	
		Free Elective	3	
Semester Credits:			16	

	<b>ENGR 489<sup>+</sup></b>	<b>Electrical Design II</b>	4	
	<b>ENGR 494</b>	<b>Intro Renewable Energy Resource</b>	3	
	<b>ENGR 497</b>	<b>AC &amp; DC Power Distribution Sys</b>	3	
		General Education Elective**	3	
		Free Elective	3	
Semester Credits:			16	

USCG License Exam: Lower Division Credits: Upper Division Credits: License Credits (L in left column): Total Credits: 

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+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Electrical Engineering with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100	Swimming and Lifetime Fitness	1	
Semester Credits:			15	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			14.5	

**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			14.5	

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	<b>ENGR 292<sup>+</sup></b>	<b>Digital Electronics</b>	4	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			17	

	<b>ENGR 526</b>	<b>Industrial Internship I</b>	3	
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**Upper Division - Junior Year**

	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 383</b>	<b>Signals &amp; Systems</b>	3	
	<b>ENGR 385</b>	<b>Instrumentation &amp; Measurement</b>	1	
	<b>ENGR 387<sup>+</sup></b>	<b>Analog Electronics</b>	4	
	<b>ENGR 394</b>	<b>Electromagnetic Fields</b>	3	
	ENGR 3xx	Engineering Technical Writing	3	
Semester Credits:			17	

	ENGR 314	Engineering Economics	3	
	<b>ENGR 395<sup>+</sup></b>	<b>Electric Machines</b>	3	
	<b>ENGR 396</b>	<b>Machine Learning</b>	3	
	<b>ENGR 398<sup>+</sup></b>	<b>Control System Theory</b>	3	
		General Education Elective**	3	
Semester Credits:			15	

	<b>ENGR 536</b>	<b>Industrial Internship II</b>	3	
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Alternate Internship Choice:

	<b>ENGR 538</b>	<b>Extended Industrial Internship</b>	6	
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**Upper Division - Senior Year**

	<b>ENGR 481</b>	<b>Communications Theory</b>	3	
	<b>ENGR 488<sup>+</sup></b>	<b>Electrical Design I</b>	3	
	<b>ENGR 490<sup>+</sup></b>	<b>Power Electronics &amp; Electric Drives</b>	4	
		Engineering Elective	3	
		Free Elective	3	
Semester Credits:			16	

	<b>ENGR 489<sup>+</sup></b>	<b>Electrical Design II</b>	4	
	<b>ENGR 494</b>	<b>Intro Renewable Energy Resource</b>	3	
	<b>ENGR 497</b>	<b>AC &amp; DC Power Distribution Sys</b>	3	
		Engineering Elective	3	
Semester Credits:			13	

Lower Division Credits:	64
Upper Division Credits:	64
Total Credits:	128

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Facilities Engineering with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			17.5	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	<i>or</i> *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			19	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	<b>ENGR 543<sup>+</sup></b>	<b>Ship Systems III</b>	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
Semester Credits:			18	

	ENGR 347	Strength of Materials	3	
	<i>or</i> *CHEM 212	Materials Science I		
	ENGR 351	Heat Transfer	3	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
	<b>ENGR 424</b>	<b>HVAC System Op &amp; Mgmt</b>	3	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	4	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			21	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	ENGR 314	Engineering Economics	3	
	ENGR 350 <sup>+</sup>	Automation & Control Systems	3	
L	ENGR 371	Applied Naval Architecture	3	
	<b>ENGR 423</b>	<b>HVAC System Design</b>	3	
	<b>ENGR 425</b>	<b>Facilities Engineering Design I</b>	4	
Semester Credits:			16	

	ENGR 348	Strength of Materials Laboratory	1	
	<b>ENGR 349</b>	<b>Transport Processes Laboratory</b>	1	
	<b>ENGR 426</b>	<b>Facilities Engineering Design II</b>	4	
	<b>ENGR 444</b>	<b>Engr Project Management</b>	3	
		General Education Elective**	3	
		Free Elective	3	
Semester Credits:			15	

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	76
License Credits (L in left column):	42
Total Credits:	159

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).



**B.E. in Facilities Engineering with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100 or	Swimming and Lifetime Fitness Phys Ed Elective	1	
Semester Credits:			15	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			14.5	

**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			14.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			16	

	<b>ENGR 526</b>	<b>Industrial Internship I</b>	3	
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**Upper Division - Junior Year**

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
	ENGR3xx	Engineering Comm. & Ethics	3	
Semester Credits:			15	

	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
	ENGR 351	Heat Transfer	3	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
	<b>ENGR 424</b>	<b>HVAC System Op &amp; Mgmt</b>	3	
Semester Credits:			15	

	<b>ENGR 536</b>	<b>Industrial Internship II</b>	3	
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Alternate Internship Choice:

	<b>ENGR 538</b>	<b>Extended Industrial Internship</b>	6	
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**Upper Division - Senior Year**

	ENGR 314	Engineering Economics	3	
	ENGR 350 <sup>+</sup>	Automation & Control Systems	3	
	<b>ENGR 423</b>	<b>HVAC System Design</b>	3	
	<b>ENGR 425</b>	<b>Facilities Engineering Design I</b>	4	
		Engineering Elective	3	
Semester Credits:			16	

	ENGR 348	Strength of Materials Laboratory	1	
	<b>ENGR 349</b>	<b>Transport Processes Laboratory</b>	1	
	<b>ENGR 426</b>	<b>Facilities Engineering Design II</b>	4	
	<b>ENGR 444</b>	<b>Engr Project Management</b>	3	
		General Education Elective**	3	
		Free Elective	3	
Semester Credits:			15	

Lower Division Credits:	63
Upper Division Credits:	64
Total Credits:	127

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Marine Engineering with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			17.5	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	<i>or</i> *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			19	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		<i>OR</i>	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	3	
	<i>or</i> *CHEM 212	Materials Science I		
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	<b>ENGR 543<sup>+</sup></b>	<b>Ship Systems III</b>	3	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			17	

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 351	Heat Transfer	3	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	4	
Semester Credits:			17	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	ENGR 314	Engineering Economics	3	
L	ENGR 371	Applied Naval Architecture	3	
	<b>ENGR 423</b>	<b>HVAC System Design</b>	3	
	<i>or</i> <b>ENGR 454</b>	<b>Vibrations</b>		
	<b>ENGR 440<sup>+</sup></b>	<b>Marine Engineering Design II</b>	3	
	<b>ENGR 453</b>	<b>Modern Concepts</b>	3	
	ENGR3xx	Engineering Technical Writing	3	
Semester Credits:			18	

	<b>ENGR 349</b>	<b>Transport Processes Laboratory</b>	1	
	ENGR 350 <sup>+</sup>	Automation & Control Systems	3	
	<b>ENGR 444</b>	<b>Engr Project Management</b>	3	
	<b>ENGR 450</b>	<b>Marine Engineering Design III</b>	4	
	<b>ENGR 495</b>	<b>Marine Electrical Systems</b>	3	
		General Education Elective**	3	
Semester Credits:			17	

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	75
License Credits (L in left column):	42
Total Credits:	158

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Mechanical Engineering with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			17.5	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	<i>or</i> *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			19	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		<i>OR</i>	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	3	
	<i>or</i> *CHEM 212	Materials Science I		
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	<b>ENGR 543<sup>+</sup></b>	<b>Ship Systems III</b>	3	
	ENGR 341	Fluid Mechanics	3	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			17	

	<b>ENGR 312</b>	<b>Machine Design</b>	3	
	<b>ENGR 454</b>	<b>Vibrations</b>	3	
	ENGR 351	Heat Transfer	3	
	ENGR 390	Applied Electronics	3	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	4	
	ENGR 3xx	Engineering Comm. & Ethics	3	
Semester Credits:			19	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	ENGR 348	Strength of Materials Laboratory	1	
L	ENGR 371	Applied Naval Architecture	3	
	<b>ENGR 418<sup>+</sup></b>	<b>Mechanical Engr Design I</b>	4	
	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 456</b>	<b>Computer Aided Engineering</b>	3	
		General Education Elective**	3	
Semester Credits:			17	

	ENGR 314	Engineering Economics	3	
	<b>ENGR 349</b>	<b>Transport Processes Laboratory</b>	1	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	<b>ENGR 419<sup>+</sup></b>	<b>Mechanical Engr Design II</b>	4	
		Engineering Elective	3	
		Free Elective	3	
Semester Credits:			17	

USCG License Exam:

Lower Division Credits: 83

Upper Division Credits: 76

License Credits (L in left column): 42

Total Credits: 159

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Mechanical Engineering with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110+	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100	Swimming and Lifetime Fitness	1	
	or	Phys Ed Elective		

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
		Semester Credits:	14.5	

**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
	ENGR 503+	Manufacturing Processes I	1	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
		Semester Credits:	15.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
		Semester Credits:	16	

	<b>ENGR 526</b>	<b>Industrial Internship I</b>	3	
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**Upper Division - Junior Year**

	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
	ENGR 380+	Intro to Electric Machinery	3	
	ENGR 341	Fluid Mechanics	3	
		Free Elective	3	
		Semester Credits:	15	

	<b>ENGR 312</b>	<b>Machine Design</b>	3	
	<b>ENGR 454</b>	<b>Vibrations</b>	3	
	ENGR 351	Heat Transfer	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
		Electrical Engineering Elective	3	
		Semester Credits:	15	

	<b>ENGR 536</b>	<b>Industrial Internship II</b>	3	
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Alternate Internship Choice:

	<b>ENGR 538</b>	<b>Extended Industrial Internship</b>	6	
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**Upper Division - Senior Year**

	<b>ENGR 418+</b>	<b>Mechanical Engr Design I</b>	4	
	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 456</b>	<b>Computer-Aided Engineering</b>	3	
		General Education Elective**	3	
		Engineering Elective	3	
		Semester Credits:	16	

	ENGR 314	Engineering Economics	3	
	ENGR 348	Strength of Materials Laboratory	1	
	<b>ENGR 349</b>	<b>Transport Processes Laboratory</b>	1	
	ENGR 354+	Marine Engineering Design I	3	
	<b>ENGR 419+</b>	<b>Mechanical Engr Design II</b>	4	
		Engineering Elective	3	
		Semester Credits:	15	

Lower Division Credits:	64
Upper Division Credits:	64
Total Credits:	128

Electrical Engineering Electives:

- ENGR 383 Signals & Systems
- ENGR 390 Applied Electronics
- ENGR 396 Machine Learning
- ENGR 398 Control System Theory
- ENGR 494 Introduction to Renewable Energy Resources

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Naval Architecture with Deck License****Fall Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

**Spring Semester**

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
Semester Credits:			19.5	

L	MT 510	Summer Sea Term I	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
L	METE 201 <sup>+</sup>	Meteorology for Mariners	3	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
	NAVG 212	Navigation II: Oceans	4	
L		General Education Elective**	3	
Semester Credits:			20	

L	MT 520	Summer Sea Term II	6		OR	L	MT 521	Cadet Comm Vessel Shipping	6	
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**Upper Division - Junior Year**

	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
L	ENGR 363	Ship Statics	3	
	ENGR 365 <sup>+</sup>	Ship Form and Graphics	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			17	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 366 <sup>+</sup>	Ship Structure	4	
	ENGR 368 <sup>+</sup>	Ship Design I	4	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
Semester Credits:			20	

L	MT 530	Summer Sea Term III	5	
L	MTO 412	Medical Care Provider	1	

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

**Upper Division - Senior Year**

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 461 <sup>+</sup>	Ship Design II	4	
	ENGR 462 <sup>+</sup>	Ship Resistance and Propulsion	3	
	ENGR 472 <sup>+</sup>	Sailboat Principles & Design	3	
	or	Engineering Elective		
L	MT 321	Intro to Cargo Ops & Stability	3	
	ENGR 3xx	Engineering Comm. & Ethics	3	
Semester Credits:			19	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	ENGR 471 <sup>+</sup>	Ship Design III	4	
	ENGR 473	Ship Dynamics	3	
	ENGR 476 <sup>+</sup>	Power Boat Principles & Design	3	
	or	Engineering Elective		
L	MT 322	Marine Cargo Operations	3	
Semester Credits:			17	

All Naval Architecture students must take at least one of the Boat Principles & Design courses ENGR 472/476.

**9th Semester**

L	MT 412	Deck License Seminar	4	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic)	3	
		General Education Elective**	3	
		Free Elective	3	
Semester Credits:			16	

USCG License Exam:

Lower Division Credits: Upper	86
Division Credits:	95
License Credits (L in left column):	63
Total Credits:	181

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Naval Architecture with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			17.5	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			19	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
L	<b>ENGR 363</b>	<b>Ship Statics</b>	3	
	<b>ENGR 365<sup>+</sup></b>	<b>Ship Form and Graphics</b>	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	<b>ENGR 543<sup>+</sup></b>	<b>Ship Systems III</b>	3	
	ENGR 3xx	Engineering Technical Writing	3	
Semester Credits:			18	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	<b>ENGR 366<sup>+</sup></b>	<b>Ship Structure</b>	4	
	<b>ENGR 368<sup>+</sup></b>	<b>Ship Design I</b>	4	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	4	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			20	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 390	Applied Electronics	3	
	<b>ENGR 461<sup>+</sup></b>	<b>Ship Design II</b>	4	
	<b>ENGR 462<sup>+</sup></b>	<b>Ship Resistance and Propulsion</b>	3	
	<b>ENGR 472<sup>+</sup></b>	<b>Sailboat Principles &amp; Design</b>	3	
	or	Engineering Elective		
Semester Credits:			16	

	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	<b>ENGR 471<sup>+</sup></b>	<b>Ship Design III</b>	4	
	<b>ENGR 473</b>	<b>Ship Dynamics</b>	3	
	<b>ENGR 476<sup>+</sup></b>	<b>Power Boat Principles &amp; Design</b>	3	
	or	Engineering Elective		
		General Education Elective**	3	
Semester Credits:			17	

All Naval Architecture students must take at least one of the Boat Principles & Design courses ENGR 472/476

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

USCG License Exam:	
Lower Division Credits:	83
Upper Division Credits:	77
License Credits (L in left column):	42
Total Credits:	160

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.E. in Naval Architecture with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
	PE 100	Swimming and Lifetime Fitness	1	
Semester Credits:			15	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
	ENGR 120	Programming for Engineers	2	
	MATH 102	Calculus II	4	
	PHYS 102	Engineering Physics I	4	
	PHYS 104	Engineering Physics I Laboratory	0.5	
Semester Credits:			14.5	

**Lower Division - Sophomore Year**

	ENGR 242	Statics	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		General Education Elective**	3	
Semester Credits:			14.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials		
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
	MATH 212	Differential Equations	4	
		General Education Elective**	3	
Semester Credits:			16	

	<b>ENGR 526</b>	<b>Industrial Internship I</b>	3	
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**Upper Division - Junior Year**

	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I		
	<b>ENGR 363</b>	<b>Ship Statics</b>	3	
	<b>ENGR 365<sup>+</sup></b>	<b>Ship Form and Graphics</b>	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
	ENGR 3xx	Engineering Technical Writing	3	
Semester Credits:			15	

	ENGR 341	Fluid Mechanics	3	
	ENGR 344	Thermodynamics	3	
	ENGR 348	Strength of Materials Laboratory	1	
	<b>ENGR 366<sup>+</sup></b>	<b>Ship Structure</b>	4	
	<b>ENGR 368<sup>+</sup></b>	<b>Ship Design I</b>	4	
Semester Credits:			15	

	<b>ENGR 536</b>	<b>Industrial Internship II</b>	3	
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Alternate Internship Choice:

	<b>ENGR 538</b>	<b>Extended Industrial Internship</b>	6	
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**Upper Division - Senior Year**

	ENGR 345	Engineering Statistical Analysis	3	
	<b>ENGR 461<sup>+</sup></b>	<b>Ship Design II</b>	4	
	<b>ENGR 462<sup>+</sup></b>	<b>Ship Resistance and Propulsion</b>	3	
	<b>ENGR 472<sup>+</sup></b>	<b>Sailboat Principles &amp; Design</b>	3	
	or	Engineering Elective		
		Engineering Elective	3	
Semester Credits:			16	

	ENGR 354 <sup>+</sup>	Marine Engineering Design I	3	
	<b>ENGR 471<sup>+</sup></b>	<b>Ship Design III</b>	4	
	<b>ENGR 473</b>	<b>Ship Dynamics</b>	3	
	<b>ENGR 476<sup>+</sup></b>	<b>Power Boat Principles &amp; Design</b>	3	
	or	Engineering Elective		
		General Education Elective**	3	
Semester Credits:			16	

All Naval Architecture students must take at least one of the Boat Principles &amp; Design courses ENGR 472/476.

Lower Division Credits:	63
Upper Division Credits:	65
Total Credits:	128

\* Students wishing to transfer to a Mechanical Engineering program at another SUNY campus should take this course.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Data Science and Machine Learning with Internship,****Logistics & Transportation Concentration****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	<b>CS 131</b>	<b>Programming I</b>	3	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business and Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 101	Calculus I	4	
Semester Credits:			14	

		Gen Ed DEISJ Elective	3	
	<b>CS 202</b>	<b>Introduction to Data Science</b>	3	
	MATH 102	Calculus II	4	
	PE 100	Swimming and Lifetime Fitness	1	
(1)		Gen Ed Natural Science	4	
Semester Credits:			15	

**Lower Division - Sophomore Year**

	MATH 211	Calculus III	4	
	<b>MATH 213</b>	<b>Discrete Mathematics</b>	3	
	MATH 251	Statistics	3	
		General Education Elective**	3	
		LAS Elective	3	
Semester Credits:			16	

	<b>MATH 311</b>	<b>Linear Algebra</b>	3	
	<b>STAT 301</b>	<b>Statistics II</b>	3	
		General Education Elective**	3	
(1)		General Education Elective**	3	
		LAS Elective	3	
Semester Credits:			15	

**Upper Division - Junior Year**

	<b>CS 301</b>	<b>Data Structures &amp; Algorithms</b>	3	
	<b>CS 311</b>	<b>Machine Learning I</b>	3	
	GBTT 251	Transportation Systems	3	
	HUMN 467	Science Fiction	3	
		LAS Elective	3	
Semester Credits:			15	

	<b>CS 312</b>	<b>Machine Learning II</b>	3	
	GBTT 252	Business of Shipping	3	
	<b>STAT 401</b>	<b>Time Series Analysis</b>	3	
		LAS Elective	3	
Semester Credits:			12	

	<b>DS 525</b>	<b>Data Science Internship</b>	6	
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**Upper Division - Senior Year**

	<b>CS 401</b>	<b>Database Systems</b>	3	
	<b>CS 411</b>	<b>Deep Learning</b>	3	
	GBTT 453	Import/Export and Traffic Mgt	3	
(2)		MATH/STAT/CS Elective	3	
		Free Elective	3	
Semester Credits:			15	

	<b>CS 425</b>	<b>Data Science Practicum</b>	3	
	GBTT 351	International Logistics	3	
(2)		MATH/STAT/CS Elective	3	
		Free Elective	3	
Semester Credits:			12	

(1) Students in Oceans and Environment Concentration must take OCEA 101 and OCEA 102.

(2) Must be 3 credits or above and at least one must be 300 level or above.

Lower Division Credits:	60
Upper Division Credits:	60
Total Credits:	120

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).



**B.S. in International Transportation and Trade with Deck License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
	MTO 103	Water Safety & Survival	1	
L	MTO 112*	STCW Basic Training	2	
		General Education Elective**	3	
Semester Credits:			18	

		Gen Ed DEISJ Elective	3	
	GBEC 121	Macroeconomics	3	
	HIST 102	US History Since 1865	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
Semester Credits:			19	

L	<b>MT 510</b>	<b>Summer Sea Term I</b>	<b>6</b>	
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**Lower Division - Sophomore Year**

	GBAC 311	Financial Accounting	3	
	GBEC 122	Microeconomics	3	
	GBLW 431	Business Law	3	
	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 314	Rules of the Road	2	
		General Education Elective**	3	
Semester Credits:			17	

	GBAC 315	Managerial Accounting	3	
	GBLW 433	Admiralty Law	3	
	GBMG 345	Fundamentals of Marketing	3	
	HUMN 202	Later Wrld Civilization & Culture	3	
L	METE 201+	Meteorology for Mariners	3	
L	NAVG 212	Navigation II: Oceans	4	
Semester Credits:			19	

L	<b>MT 520</b>	<b>Summer Sea Term II</b>	<b>6</b>		OR	L	<b>MT 521</b>	<b>Cadet Comm Vessel Shipping</b>	<b>6</b>	
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**Upper Division - Junior Year**

	ENGL 452	Technical Writing	3	
	GBEC 424	Intl. Economics and Finance	3	
	GBTT 251	Transportation Systems	3	
L	MT 322*	Marine Cargo Operations	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
Semester Credits:			18.5	

	GBEC 427	Financial Management	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		LAS Elective	3	
Semester Credits:			18	

L	<b>MT 530</b>	<b>Summer Sea Term III</b>	<b>5</b>	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	GBLW 435	Environmental Law & Policy	3	
	GBMG 341	Organizational Management	3	
	GBTT 451	Marine Insurance	3	
L	MT 412	Deck License Seminar	4	
L	MT 426	Maritime Communications	3	
		International Studies Humanities Elective	3	
Semester Credits:			19	

	GBEC 429	Seminar: Transport. Economics	3	
	or GBMG 440	Seminar: Strategy and Policy	3	
	GBTT 351	International Logistics	3	
	GBTT 453	Import/Export & Traffic Mgt.	3	
	GBUS 300	International Business	3	
	MATH 446	Operations Research	3	
L	NAUT 416*	Bridge Resource Mgmt (Unltd Lic)	3	
Semester Credits:			18	

**International Studies Humanities Electives**

ENGL 416 Literature of the Sea	NVSC 102 Sea Power and Maritime Affairs
ENGL 418 Contemporary Literature	NVSC 311 Evolution of Warfare
ENGL 470 Major British Authors	Foreign Language Courses
HIST 401-02 Topics in European Civilization I-II	
HIST 418 Hist of American Foreign Policy	
HIST 421 Vietnam and America	
HIST 425 History of Technology	
HIST 426 Twentieth Century Technology	
HIST 473 Europe and the World	
HIST 474 Latin America and the World	

USCG License Exam:

Lower Division Credits: 85

Upper Division Credits: 79.5

License Credits (L in left column): 62

Total Credits: 164.5

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in International Transportation and Trade with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	or MATH 111	Applied Calculus I		
		GenEd Natural Science	3	
		Semester Credits:	15	

		Gen Ed DEISJ Elective	3	
	GBEC 121	Macroeconomics	3	
	GBMG 345	Fundamentals of Marketing	3	
	MATH 251	Statistics	3	
		General Education Elective**	3	
		Semester Credits:	15	

**Lower Division - Sophomore Year**

	ENGL 452	Technical Writing	3	
	GBAC 311	Financial Accounting	3	
	GBEC 122	Microeconomics	3	
	HIST 102	US History Since 1865	3	
		General Education Elective**	3	
		Semester Credits:	15	

	GBAC 315	Managerial Accounting	3	
	GBLW 431	Business Law	3	
	HUMN 202	Later Wrl'd Civilization & Culture	3	
		Free Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

**Upper Division - Junior Year**

	GBEC 424	Intl. Economics and Finance	3	
	GBLW 433	Admiralty Law	3	
	GBMG 341	Organizational Management	3	
	GBTT 251	Transportation Systems	3	
		LAS Elective	3	
		Semester Credits:	15	

	GBEC 427	Financial Management	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
		International Studies Elective	3	
		LAS Elective	3	
		Semester Credits:	15	

	GBUS 525	ITT Internship / Work Experience	6		OR		GBUS 526	ITT Study Abroad	6	
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**Upper Division - Senior Year**

	GBLW 435	Environmental Law & Policy	3	
	GBTT 451	Marine Insurance	3	
	GBTT 453	Import/Export & Traffic Mgt.	3	
	GBTT 457	Port and Terminal Operations	3	
		International Studies Elective	3	
		Semester Credits:	15	

	GBEC 429	Seminar: Transport. Economics	3	
	or GBMG 440	Seminar: Strategy and Policy		
	GBTT 351	International Logistics	3	
	GBUS 300	International Business	3	
	MATH 446	Operations Research	3	
		Phys Ed Elective	1	
		Semester Credits:	13	

Lower Division Credits:	60
Upper Division Credits:	64
Total Credits:	124

**International Studies Electives**

At least one of these two electives must be chosen from the left column (International Studies Humanities Electives)

ENGL 416	Literature of the Sea	GBLW 437	International Law
ENGL 418	Contemporary Literature	GBMG 442	Intl Marketing Management
ENGL 470	Major British Authors	GBMG 443	Cross-Cultural Management
HIST 401/2	Topics in European Civilization I-II	GBTT 460	Principles of Global Supply Chain Security
HIST 418	Hist of American Foreign Policy	GBUS 400	Maritime Cyber Security
HIST 421	Vietnam and America	GBUS 410	Studies in the African Transportation & Maritime Industry
HIST 425	History of Technology	GBUS 526	ITT Study Abroad*
HIST 426	Twentieth Century Technology	MT 408	International Safety Management
HIST 473	Europe and the World	MT 435	Maritime Security
HIST 474	Latine America and the World		
NVSC 102	Sea Power and Maritime Affairs		
NVSC 311	Evolution of Warfare		
	Foreign Language Courses		

\*Other Study Abroad courses to be evaluated by Dept. Chair

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Marine Environmental Science with Deck License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	<b>BIO 201<sup>+</sup></b>	<b>General Biology I</b>	4	
	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ES 101 <sup>+</sup>	Intro to Environmental Science	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calc I (or MATH 101)	4	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
Semester Credits:			18	

	<b>BIO 202<sup>+</sup></b>	<b>General Biology II</b>	4	
		Gen Ed DEISJ Elective	3	
	<b>MATH 112</b>	<b>Applied Calc II (or MATH 102)</b>	3	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
	<b>OCEA 101</b>	<b>General Oceanography</b>	3	
	<b>OCEA 102</b>	<b>General Oceanography Lab</b>	1	
L	MTO 103	Water Safety & Survival	1	
Semester Credits:			20	

L	<b>MT 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	<b>GEOL 101</b>	<b>General Geology</b>	3	
L	METE 201 <sup>+</sup>	Meteorology for Mariners	3	
L	MT 250	Ship Construction & Stability	2	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
Semester Credits:			18.5	

	<b>BIO 210</b>	<b>Ecology</b>	3	
	<b>CHEM 123</b>	<b>General Chemistry II</b>	3	
	<b>CHEM 124</b>	<b>General Chemistry II Laboratory</b>	1	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
L	NAVG 212	Navigation II: Oceans	4	
		General Education Elective**	3	
		General Education Elective**	3	
Semester Credits:			20	

L	<b>MT 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>MT 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>CHEM 311</b>	<b>Environmental Chemistry</b>	3	
	<b>CHEM 312</b>	<b>Environmental Chemistry Lab</b>	1	
	<b>BIO 417</b>	<b>Biostatistics</b>	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			18-19	

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>CHEM 321</b>	<b>Organic Chemistry</b>	3	
	<b>CHEM 322</b>	<b>Organic Chemistry Laboratory</b>	1	
	<b>ES 303</b>	<b>GIS</b>	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		MES Elective	3	
Semester Credits:			19-20	

L	<b>MT 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>ES 440</b>	<b>Global Climate Change</b>	3	
	<b>ES 451<sup>+</sup></b>	<b>Field Methods in Environ. Science</b>	4	
L	MT 412	Deck License Seminar	4	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
Semester Credits:			18-19	

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>ES 418</b>	<b>Environmental Sustainability</b>	3	
	<b>ES 430</b>	<b>Environmental Impact Assessment</b>	3	
	GBLW 435	Environmental Law & Policy	3	
L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic.)	3	
	<b>OCEA 402</b>	<b>Coastal Processes and Mngt</b>	3	
Semester Credits:			18-19	

\* See next page.

USCG License Exam:	
Lower Division Credits:	88.5
Upper Division Credits:	79
License Credits (L in left column):	62
	167.5-
	168.5

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

(1) This course is offered in odd years only.

(2) This course is offered in even years only.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Marine Environmental Science with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	<b>BIO 201<sup>+</sup></b>	<b>General Biology I</b>	4	
	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ES 101 <sup>+</sup>	Intro to Environmental Science	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calc I (or MATH 101)	4	
Semester Credits:			16	

	<b>BIO 202<sup>+</sup></b>	<b>General Biology II</b>	4	
		Gen Ed DEISJ Elective	3	
	<b>MATH 112</b>	<b>Applied Calc II</b> (or MATH 102)	3	
	<b>OCEA 101</b>	<b>General Oceanography</b>	3	
	<b>OCEA 102</b>	<b>General Oceanography Lab</b>	1	
	PE 100	Swimming and Lifetime Fitness	1	
Semester Credits:			15	

**Lower Division - Sophomore Year**

	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	GEOL 101	General Geology	3	
	METE 201 <sup>+</sup>	Meteorology for Mariners	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
Semester Credits:			16.5	

	<b>BIO 210</b>	<b>Ecology</b>	3	
	<b>CHEM 123</b>	<b>General Chemistry II</b>	3	
	<b>CHEM 124</b>	<b>General Chemistry II Laboratory</b>	1	
		General Education Elective**	3	
		General Education Elective**	3	
Semester Credits:			13	

**Upper Division - Junior Year**

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>BIO 417</b>	<b>Biostatistics</b>	3	
	<b>CHEM 311</b>	<b>Environmental Chemistry</b>	3	
	<b>CHEM 312</b>	<b>Environmental Chemistry Lab</b>	1	
		Free Elective	3	
Semester Credits:			13-14	

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>CHEM 321</b>	<b>Organic Chemistry</b>	3	
	<b>CHEM 322</b>	<b>Organic Chemistry Laboratory</b>	1	
	<b>ES 303</b>	<b>GIS</b>	3	
		MES Elective	3	
Semester Credits:			13-14	

	ES 505	Environmental Science Internship I	3	
	ES 515	Environmental Science Internship II	3	

**Upper Division - Senior Year**

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>ES 440</b>	<b>Global Climate Change</b>	3	
	<b>ES 451<sup>+</sup></b>	<b>Field Methods in Environ. Science</b>	4	
		Free Elective	3	
Semester Credits:			13-14	

*	BIO/METE/OCEA	Core MES Course	3-4	
	<b>ES 418</b>	<b>Environmental Sustainability</b>	3	
	<b>ES 430</b>	<b>Environmental Impact Assessment</b>	3	
	GBLW 435	Environmental Law & Policy	3	
	<b>OCEA 402</b>	<b>Coastal Processes and Mngt</b>	3	
Semester Credits:			15-16	

Lower Division Credits:	60.5
Upper Division Credits:	61
Total Credits:	121.5

**\*To fulfill the CORE MES Courses, students will choose from the following list of upper-level courses with prefixes- BIO, METE, OCEA. One course must be from each discipline for a total of three courses and the fourth from a discipline of their choice.**

BIO: Marine Biology (BIO 315), Ichthyology (BIO 415), Invertebrate Zoology (BIO 320), Marine Botany (BIO 340), Fisheries Science (BIO 416), Ecotoxicology (BIO 420)

OCEA: Marine Geology (OCEA 414), Marine Biogeochemistry (OCEA 415), Marine Environmental Issues (OCEA 425)

METE: Synoptic Meteorology (METE 350), Tropical Cyclones (METE 402), Dynamic Meteorology (METE 408), Marine Climatology (METE 411), Weather Forecasting (METE 422)

(1) This course is offered in odd years only.

(2) This course is offered in even years only.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Marine Operations with Deck License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
	<b>MTO 120*</b>	<b>Primer of Towing</b>	3	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112*	STCW Basic Training	2	
Semester Credits:			17	

	CS 101	Computer Laboratory	1	
		Gen Ed DEISJ Elective	3	
		Gen Ed US His & Civic Eng Elective	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
Semester Credits:			17	

L	<b>MT 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	GBEC 121	Macroeconomics	3	
L	METE 201*	Meteorology for Mariners	3	
L	MT 322*	Marine Cargo Operations	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
Semester Credits:			15.5	

	<b>ENGR 540*</b>	<b>Intro to Ship Systems</b>	3	
	GBEC 122	Microeconomics	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
		Gen Ed Wrld His & Glb Aw Elective	3	
		General Education Elective**	3	
Semester Credits:			18	

L	<b>MT 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

L	ENGL 452	Technical Writing	3	
	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	GBTT 251	Transportation Systems	3	
	MT 212	Ship Management	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			19	

	<b>CHEM 100</b>	<b>Introductory Chemistry</b>	3	
	GBEC 428	Economic Geography	3	
	GBTT 252	Business of Shipping	3	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Humanities Elective	3	
Semester Credits:			16	

L	<b>MT 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	GBTT 457	Port and Terminal Operations	3	
L	MT 412	Deck License Seminar	4	
L	MT 426*	Maritime Communications	3	
	<b>MTO 211</b>	<b>Advanced Towing Operations</b>	3	
		Humanities Elective	3	
Semester Credits:			16	

	GBLW 435	Environmental Law & Policy	3	
	MT 408	International Safety Mgt	3	
	<b>MTO 212</b>	<b>Business of Towing</b>	3	
L	<b>MTOD 414*</b>	<b>Bridge Resource and Team Mgmt</b>	3	
		Humanities Elective	3	
		LAS Elective	3	
Semester Credits:			18	

USCG License Exam: Lower Division Credits: **79.5**Upper Division Credits: **75**License Credits (L in left column): **62**Total Credits: **154.5**

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Marine Operations with Engine License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	ENGR 110*	Intro to Engineering Practice	2	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 112*	STCW Basic Training	2	
Semester Credits:			16	

	<b>CHEM 100</b>	<b>Introductory Chemistry</b>	<b>3</b>	
		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
L	<b>ENGR 540</b>	<b>Intro to Ship Systems</b>	<b>3</b>	
	<b>MATH 112</b>	<b>Applied Calculus II</b>	<b>3</b>	
L	MT 250	Ship Construction & Stability	2	
L	MTO 103	Water Safety & Survival	1	
Semester Credits:			16	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	CHEM 212	Materials Science I	3	
L	ENGR 503*	Manufacturing Process I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	<b>2</b>	
	GBEC 121	Macroeconomics	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
	ENGR 3xx	Engineering Comm & Ethics Req	3	
		Gen Ed US His & Civic Eng Elective	3	
Semester Credits:			18.5	

L	ENGR 504*	Manufacturing Process II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	<b>2</b>	
L	MT 322*	Marine Cargo Operations	3	
	MTO 310	Shipyards Management	3	
	<b>PHYS 214</b>	<b>General Physics II</b>	<b>4</b>	
	<b>PHYS 216</b>	<b>General Physics Lab</b>	<b>0.5</b>	
		Gen Ed Wrld His & Glb Aw Elective	3	
Semester Credits:			16.5	

L	<b>ENGR 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>ENGR 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	<b>ENGR 243</b>	<b>Transport Processes</b>	<b>3</b>	
	ENGR 290	Circuit Analysis	3	
L	<b>ENGR 543*</b>	<b>Ship Systems III</b>	<b>3</b>	
	<b>MTOE 201*</b>	<b>Engine Room Resource Mgmt</b>	3	
		General Education Elective**	3	
Semester Credits:			15	

	ENGR 380*	Intro to Electric Machinery	3	
L	<b>ENGR 544</b>	<b>Ship Systems IV</b>	<b>4</b>	
	GBTT 251	Transportation Systems	3	
	MATH 251	Statistics	3	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			15	

L	ENGR 516	Engine License Seminar	0	
L	<b>ENGR 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	GBTT 252	Business of Shipping	3	
	GBTT 457	Port and Terminal Operations	3	
	GBUS 300	International Business	3	
		Humanities Elective	3	
		LAS Elective	3	
Semester Credits:			15	

	<b>ENGR 446</b>	<b>Marine Engine Theory &amp; Appl.</b>	<b>3</b>	
	GBLW 435	Environmental Law & Policy	3	
		Humanities Elective	3	
		LAS Elective	3	
		Professional Option	3	
Semester Credits:			15	

**Professional Option Courses:**

MT 212	Ship Management
MT 435	Maritime Security
MTO 200	Intro Regulatory Framework

USCG License Exam: Lower Division Credits: Upper Division Credits: License Credits (L in left column): Total Credits: 

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

**B.S. in Marine Transportation with Deck License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112*	STCW Basic Training	2	
Semester Credits:			15	

		Gen Ed DEISJ Elective	3	
		Gen Ed US His & Civic Eng Elective	3	
	MATH 251	Statistics	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
Semester Credits:			16	

L	MT 510	Summer Sea Term I	6	
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**Lower Division - Sophomore Year**

	GBEC 121	Macroeconomics	3	
L	METE 201*	Meteorology for Mariners	3	
L	MT 322*	Marine Cargo Operations	3	
	MT 408	International Safety Mgt	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		General Education Elective**	3	
Semester Credits:			18.5	

	GBEC 122	Macroeconomics	3	
	GBTT 251	Transportation Systems	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
		Gen Ed Wrld His & Glb Aw Elective	3	
		General Education Elective**	3	
Semester Credits:			18	

L	MT 520	Summer Sea Term II	6		OR	L	MT 521	Cadet Comm Vessel Shipping	6	
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**Upper Division - Junior Year**

	ENGL 452	Technical Writing	3	
	GBEC 428	Economic Geography	3	
	GBLW 431	Business Law	3	
	GBMG 341	Organizational Management	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			18	

	GBEC 424	International Economics & Finance	3	
	GBLW 435	Environmental Law & Policy	3	
	GBTT 252	Business of Shipping	3	
	MT 435	Maritime Security	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
Semester Credits:			18	

L	MT 530	Summer Sea Term III	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

	GBUS 300	International Business	3	
L	MT 412	Deck License Seminar	4	
L	MT 426*	Maritime Communications	3	
		Humanities Elective	3	
		LAS Elective	3	
Semester Credits:			16	

	GBEC 429	Seminar: Transport. Economics	3	
	or GBMG 440	Seminar: Strategy and Policy	3	
	MATH 446	Operations Research	3	
L	NAUT 416*	Bridge Resource Mgmt (Unltd Lic.)	3	
		Humanities Elective	3	
*		Professional Option	3	
Semester Credits:			15	

**\*Professional Option Courses:**

GBAC 311 Financial Accounting

GBLW 433 Admiralty Law

GBTT 451 Marine Insurance

GBTT 460 Principles of Global Supply Chain Security

GBUS 400 Maritime Cybersecurity

MT 404 Environmental Management

MTO 212 The Business of Towing

MTO 211 Advanced Towing Operations

NAUT 420 Piloting and Shiphandling

NAUT 460 Coastal Operations

NAUT 476 Fast Rescue Boat Operations

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

USCG License Exam: Lower Division Credits: **79.5**Upper Division Credits: **73**License Credits (L in left column): **62**Total Credits: **152.5**

**B.S. in Maritime Studies with Deck License****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 111	Applied Calculus I	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112+	STCW Basic Training	2	
Semester Credits:			15	

		Gen Ed DEISJ Elective	3	
	<b>ES 101+</b>	<b>Intro to Environmental Science</b>	3	
L	MT 250	Ship Construction & Stability	2	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	NAVG 112	Navigation I: Intro to Navigation	4	
	<b>NVSC 102</b>	<b>Sea Power &amp; Maritime Affairs</b>	3	
Semester Credits:			16	

L	<b>MT 510</b>	<b>Summer Sea Term I</b>	6	
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**Lower Division - Sophomore Year**

	GBEC 121	Macroeconomics	3	
	MATH 251	Statistics	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 322+	Marine Cargo Operations	3	
		Gen Ed US His & Civic Eng Elective	3	
		Gen Ed Wrld His & Glb Aw Elective	3	
Semester Credits:			18	

	GBEC 122	Microeconomics	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
	<b>OCEA 101</b>	<b>General Oceanography</b>	3	
	<b>OCEA 102</b>	<b>General Oceanography Lab</b>	1	
		General Education Elective**	3	
		General Education Elective**	3	
Semester Credits:			19	

L	<b>MT 520</b>	<b>Summer Sea Term II</b>	6		OR	L	<b>MT 521</b>	<b>Cadet Comm Vessel Shipping</b>	6	
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**Upper Division - Junior Year**

	ENGL 452	Technical Writing	3	
	GBLW 435	Environmental Law & Policy	3	
	GBTT 251	Transportation Systems	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
		Humanities Elective	3	
Semester Credits:			18	

	GBTT 252	Business of Shipping	3	
	HIST 416	US Maritime History to Civil War	3	
	or HIST 417	US Maritime History Since 1865	3	
	MT 435	Maritime Security	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
		Humanities Elective	3	
Semester Credits:			18	

L	<b>MT 530</b>	<b>Summer Sea Term III</b>	5	
L	MTO 412	Medical Care Provider	1	

**Upper Division - Senior Year**

(1)	<b>HUMN 465</b>	<b>Humanities Research Methods</b>	3	
	or ENGL 416	Literature of the Sea	3	
L	MT 412	Deck License Seminar	4	
L	MT 426+	Maritime Communications	3	
		Humanities Elective	3	
		Humanities Elective	3	
Semester Credits:			16	

	GBEC 428	Economic Geography	3	
	<b>HUMN 490</b>	<b>Studies in Maritime Policy</b>	3	
L	NAUT 416+	Bridge Resource Mgmt (Unltd Lic.)	3	
		Humanities Elective	3	
		Law Elective	3	
Semester Credits:			15	

USCG License Exam: Lower Division Credits: Upper Division Credits: License Credits (L in left column): Total Credits: 

(1) This course is offered in odd years only.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).



**B.S. in Maritime Studies with Internship****Fall Semester****Spring Semester****Lower Division - Freshman Year**

	CS 101	Computer Laboratory	1	
	ENGL 101	Freshman English I	3	
	GBUS 100	Intro to Business & Economics	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	or MATH 111	Applied Calculus I		
	PE 100	Swimming and Lifetime Fitness	1	
Semester Credits:			13	

		Gen Ed DEISJ Elective	3	
	<b>ES 101+</b>	<b>Intro to Environmental Science</b>	3	
	MATH 251	Statistics	3	
	METE 201+	Meteorology for Mariners	3	
	<b>NVSC 102</b>	<b>Sea Power &amp; Maritime Affairs</b>	3	
Semester Credits:			15	

**Lower Division - Sophomore Year**

	ENGL 452	Technical Writing	3	
	GBEC 121	Macroeconomics	3	
		Gen Ed US His & Civic Eng Elective	3	
		Gen Ed Wrld His & Glb Aw Elective	3	
		Free Elective	3	
Semester Credits:			15	

	GBEC 122	Microeconomics	3	
	<b>OCEA 101</b>	<b>General Oceanography</b>	3	
	<b>OCEA 102</b>	<b>General Oceanography Lab</b>	1	
		General Education Elective**	3	
		General Education Elective**	3	
		Free Elective	3	
Semester Credits:			16	

**Upper Division - Junior Year**

	GBLW 435	Environmental Law & Policy	3	
	GBT 251	Transportations Systems	3	
		Humanities Elective	3	
		Humanities Elective	3	
		LAS Elective	3	
Semester Credits:			15	

	GBT 252	Business of Shipping	3	
	HIST 416	US Maritime History to Civil War	3	
	or HIST 417	US Maritime History Since 1865		
		Humanities Elective	3	
		LAS Elective	3	
		Free Elective	3	
Semester Credits:			15	

**Upper Division - Senior Year**

	GBEC 428	Economic Geography	3	
(1)	<b>HUMN 465</b>	<b>Humanities Research Methods</b>	3	
	or ENGL 416	Literature of the Sea		
	HUMN 505	Internship in Maritime Studies I	3	
		Humanities Elective	3	
		LAS Elective	3	
		Law Elective	3	
Semester Credits:			18	

	<b>HUMN 490</b>	<b>Studies in Maritime Policy</b>	3	
	HUMN 515	Internship in Maritime Studies II	3	
	or	Free Elective		
		Humanities Elective	3	
		LAS Elective	3	
		Law Elective	3	
Semester Credits:			15	

Lower Division Credits:	59
Upper Division Credits:	63
Total Credits:	122

(1) This course is offered in odd years only.

\*\*In compliance with SUNY General Education Framework requirements

Courses in **bold** type are typically limited to the semester shown.

+ Students must register for both lecture and laboratory or recitation (as applicable).

A.A.S. in Maritime Technology with Engine License

Fall Semester

Spring Semester

Freshman Year

	ENGL 101	Freshman English I	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
L	MTO 103	Water Safety & Survival	1	
L	MTO 112 <sup>+</sup>	STCW Basic Training	2	
		Gen Ed US His & Civic Eng Elective	3	
		General Education Elective**	3	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
	ENGR 100	Engineering Graphics	1	
L	<b>ENGR 540<sup>+</sup></b>	<b>Introduction to Ship Systems</b>	3	
L	MT 250	Ship Construction & Stability	2	
		Gen Ed Natural Science Elective	3	
		General Education Elective**	3	
Semester Credits:			15	

L	<b>ENGR 510</b>	<b>Summer Sea Term I</b>	6	
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L	<b>MTOE 521</b>	<b>Cadet Com Vessel Asst Engr I</b>	2	
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Sophomore Year

L	ENGR 503 <sup>+</sup>	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	<b>Ship Systems II</b>	2	
	<b>MTO 310</b>	<b>Shipyards Management</b>	3	
L	<b>MTOE 561<sup>+</sup></b>	<b>Marine Eng &amp; Aux Machinery I</b>	3	
L	<b>MTOE 564<sup>+</sup></b>	<b>Engine Room Resource Mgmt</b>	3	
L	NAUT 308	Nautical Operations: Safety	2	
Semester Credits:			14	

L	ENGR 504 <sup>+</sup>	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	<b>Ship Systems I</b>	2	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
L	<b>MTOE 563<sup>+</sup></b>	<b>Marine Electrical Machinery</b>	3	
L	<b>MTOE 562<sup>+</sup></b>	<b>Marine Eng &amp; Aux Machinery II</b>	3	
L	MTO 412	Medical First Aid	1	
Semester Credits:			13	

L	<b>MTOE 522</b>	<b>Cadet Com Vessel Asst Engr II</b>	4	
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L	<b>MTOE 523</b>	<b>Cadet Com Vessel Asst Engr III</b>	2	
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License Credits (L in left column):	46
Total Credits:	73

\*\*In compliance with SUNY General Education Framework requirements  
Courses in **bold** type are typically limited to the semester shown.      + Students must register for both lecture and laboratory or recitation (as applicable).

A.A.S. in Maritime Technology with Deck License

Fall Semester

Freshman Year

Spring Semester

	ENGL 101	Freshman English I	3	
	LEAD 101	Leadership/Maritime Experience	1	
	MATH 090	Intro to College Mathematics	4	
	<b>MTO 120+</b>	<b>Primer of Towing</b>	3	
L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
L	MTO 112+	STCW Basic Training	2	
		General Education Elective**	3	
Semester Credits:			17	

		Gen Ed DEISJ Elective	3	
L	MTO 103	Water Safety & Survival	1	
L	MT 250	Ship Construction & Stability	2	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Gen Ed US His & Civic Eng Elective	3	
		General Education Elective**	3	
Semester Credits:			16	

L	<b>MT 510</b>	<b>Summer Sea Term I</b>	6	
L	<b>*MTOD 524</b>	<b>Cadet Com Vssl Ship Lim Ton I</b>	2	

\* MT 520: Summer Sea Term II may be substituted for MTOD 524. Note that MT 520 has prerequisites MT 510, METE 201, and NAVG 212.

Sophomore Year

L	METE 201+	Meteorology for Mariners	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
	<b>MTO 211</b>	<b>Advanced Towing Operations</b>	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAUT 314	Rules of the Road	2	
L	NAUT 315	Intro to Integrated Bridge Systems	3	
Semester Credits:			16	

L	MT 322+	Marine Cargo Operations	3	
L	MT 426+	Maritime Communications	3	
	<b>MTO 212</b>	<b>Business of Towing</b>	3	
L	<b>MTOD 414+</b>	<b>Bridge Resource and Team Mgmt</b>	3	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
L	MTO 412	Medical First Aid	1	
L	NAVG 212	Navigation II: Oceans (optional)***	4	
Semester Credits:			17 or 21	

\*\*\* Required for Oceans Endorsement Only

L	<b>MTOD 525</b>	<b>Cadet Com Vssl Ship Lim Ton II</b>	4	
L	<b>MTOD 526</b>	<b>Cadet Com Vssl Ship Lim Ton III</b>	2	

License Credits (L in left column):	51
License Credits with Oceans Endorsement:	55
Total Credits:	80
Total Credits with Oceans Endorsement:	81

Note: Though not required for your license, students who plan to sail are strongly advised to take MT 435 (Maritime Security) in addition to the courses above.

\*\*In compliance with SUNY General Education Framework requirements  
Courses in **bold** type are typically limited to the semester shown. + Students must register for both lecture and laboratory or recitation (as applicable).