

# UNDERGRADUATE DEGREE CURRICULA

For Students Entering Maritime College During 2021-22 Academic Year

As of October 28, 2021

# UNDERGRADUATE DEGREE CURRICULA

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## **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.

<u>**Rules about Curriculum Changes**</u> (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 numbered 100 or higher, *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 200 or higher (except ENGL 452); HIST 200 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; ENGL 200 or higher (except ENGL 452); GBEC 121, 122, 424, 428; GBLW 435; HIST 200 or higher; HUMN 300 or higher; MATH 101 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**

		Low	ver Div	visior
	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	
L	PS 103	Water Safety & Survival	1	
L	PS 112+	STCW Basic Training	2	
		Semester Credits:	17	

### **Spring Semester**

						1 0		
N	ver Div	visio	n - 1	Fres	hman Year			
	3		Ī		ENGL 103	Freshman English II for Engineers	3	
	1		Ī		ENGR 100	Engineering Graphics	1	
	3		I		ENGR 120	Programming for Engineers	2	
	2		I		MATH 102	Calculus II	4	
	1		I	L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
	4		I	L	NAVG 112	Navigation I: Intro to Navigation	4	
	1		I			Engineering Physics I	4	
	2				PHYS 104	Engineering Physics I Laboratory	0.5	
	17		I			Semester Credits:	19.5	

MT 510 Summer Sea Term I 6 L

### Lower Division - Sophomore Year

		2011		
	ENGR 242	Statics	3	
	HUMN 201	World Literature & Culture I	3	
	MATH 211	Calculus III	4	
L	METE 201+	Meteorology for Mariners	3	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	<b>ENGR 292</b> <sup>+</sup>	Digital Electronics	4	
	HUMN 202	World Literature & Culture II	3	
	MATH 212	Differential Equations	4	
L	NAVG 212	Navigation II: Oceans	4	
		Semester Credits:	21	

MT 521 Cadet Comm Vessel Shipping

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### - Junior Year

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

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

### **Upper Division - Senior Year**

	ENGR 481	<b>Communications Theory</b>	3	
	<b>ENGR 488</b> <sup>+</sup>	Electrical Design I	3	
	<b>ENGR 490</b> <sup>+</sup>	<b>Power Electronics &amp; Electric Drives</b>	4	
	HIST 101	American Civilization I	3	
L	MT 321	Intro to Cargo Ops & Stability	3	
		Free Elective	3	
		Semester Credits:	19	

PS 412 Medical Care Provider

#### 9th Semester

	HIST 102	American Civilization II	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	

	ENGR 489+	Electrical Design II	4	
	<b>ENGR 494</b>	Intro Renewable Energy Resource	3	
	ENGR 497	AC & DC Power Distribution Sys	3	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
		C	1.2	

Semester Credits: 13

USCG License Exam:

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87	I
93	I

62

6

Lower Division Credits: Upper Division Credits: License Credits (L in left column): 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. Courses in **bold type** are typically limited to the semester shown. <sup>+</sup> Students must register for both lecture and laboratory or recitation.

11115 203	Engineering Physics II Laboratory	0.5		
	Semester Credits:	17.5		
MT 520	Summer Sea Term II	6		OR
MT 520	l	6 pper D	Divisi	

	_			
AUT 315 Intro to Integrated Bridge Systems	3		L	
Semester Credits:	19			
		-		
MT 530 Summer Sea Term III	5			

e Systems	3		L	NAV
ter Credits:	19			
		-		
	5			

## B.E. in Electrical Engineering with Engine License

### **Fall Semester**

		Lo	wer Div	visio
	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	PS 103	Water Safety & Survival	1	
L	PS 112 <sup>+</sup>	STCW Basic Training	2	
		Semester Credits:	17	

### **Spring Semester**

on -	n - Freshman Year								
		ENGL 103	Freshman English II for Engineers	3					
		ENGR 100	Engineering Graphics	1					
		ENGR 120	Programming for Engineers	2					
	L	ENGR 540*	Introduction to Ship Systems	3					
		MATH 102	Calculus II	4					
		PHYS 102	Engineering Physics I	4					
T		PHYS 104	Engineering Physics I Laboratory	0.5					
]	-		Semester Credits:	17.5					

ENGR 510 Summer Sea Term I L 6

### Lower Division - Sophomore Year

		LUW		13101	- 0	օրո	
	ENGR 242	Statics	3				
L	ENGR 503+	Manufacturing Processes I	1				
L	<b>ENGR 542</b>	Ship Systems II	2				]
	HUMN 201	World Literature & Culture I	3			L	
	MATH 211	Calculus III	4			L	
	PHYS 201	Engineering Physics II	4				
	PHYS 203	Engineering Physics II Laboratory	0.5				
		Semester Credits:	17.5				

	CHEM 212	Materials Science I	3	
	ENGR 290	Circuit Analysis	3	
	<b>ENGR 292</b> <sup>+</sup>	Digital Electronics	4	
L	ENGR 504+	Manufacturing Processes II	1	
L	ENGR 541	Ship Systems I	2	
	HUMN 202	World Literature & Culture II	3	
	MATH 212	Differential Equations	4	
		Semester Credits:	20	

#### ENGR 520 Summer Sea Term II L

#### ORENGR 521 Cadet Comm Vessel Shipping L

		τ	Jpper I	Divisi	on - Ju	nior Year
	ENGR 345	Engineering Statistical Analysis	3			ENC
	ENGR 383	Signals & Systems	3			ENG
	ENGR 385	Instrumentation & Measurement	1			ENG
	<b>ENGR 387</b> <sup>+</sup>	Analog Electronics	4			ENG
	ENGR 394	Electromagnetic Fields	3		L	ENG
L	ENGR 543 <sup>+</sup>	Ship Systems III	3		L	NAU
	HIST 101	American Civilization I	3			
		Semester Credits:	20			

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

Semester Credits: 18

L	ENGR 516	Engine License Seminar	0	
L	ENGR 530	Summer Sea Term III	5	
L	PS 412	Medical Care Provider	1	

### **Upper Division - Senior Year**

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

	ENGR 489+	Electrical Design II	4	
	ENGR 494	Intro Renewable Energy Resource	3	
	ENGR 497	AC & DC Power Distribution Sys	3	
	HIST 102	American Civilization II	3	
		Free Elective	3	
-		Semester Credits:	16	

USCG License Exam:

84

76

42

6

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

Total Credits: 160

<sup>+</sup> Students must register for both lecture and laboratory or recitation.

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	4		L	I
	4			E

## **B.E. in Electrical Engineering with Internship**

### **Fall Semester**

		L	ower Dr	VISIO
	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	

### Lower Division - Freshman Year

### **Spring Semester**

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Lower Division - Sophomore Year

ENGR 242	Statics	3	
HUMN 201	World Literature & Culture I	3	
MATH 211	Calculus III	4	
PHYS 201	Engineering Physics II	4	
PHYS 203	Engineering Physics II Laboratory	0.5	
	Semester Credits:	14.5	

CHEM 212	Materials Science I	3	
ENGR 290	Circuit Analysis	3	
<b>ENGR 292</b> <sup>+</sup>	Digital Electronics	4	
HUMN 202	World Literature & Culture II	3	
MATH 212	Differential Equations	4	
	Semester Credits:	17	

ENGR 526 Industrial Internship I 3

	Ul	pper I	Divisi	on -	Ju	nior Year	
ENGR 345	Engineering Statistical Analysis	3				ENGR 314	Engineering Economics
ENGR 383	Signals & Systems	3				<b>ENGR 395</b> <sup>+</sup>	Electric Machines
ENGR 385	Instrumentation & Measurement	1				ENGR 396	Machine Learning
ENGR 387 <sup>+</sup>	Analog Electronics	4				<b>ENGR 398</b> <sup>+</sup>	Control System Theory
ENGR 394	Electromagnetic Fields	3				HIST 102	American Civilization II
HIST 101	American Civilization I	3					
	Semester Credits:	17					Semester Credits:
							-

3

ENGR 536 Industrial Internship II

Alternate Internship Choice:

ENGR 538	Extended Industrial Internship	6	

### **Upper Division - Senior Year**

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

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

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

## **B.E. in Facilities Engineering with Engine License**

### **Fall Semester**

		Lo	wer Div	visio
	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	PS 103	Water Safety & Survival	1	
L	PS 112 <sup>+</sup>	STCW Basic Training	2	
		Semester Credits:	17	

### **Spring Semester**

n - 1	Fres	hman Year			
Ĩ		ENGL 103	Freshman English II for Engineers	3	
		ENGR 100	Engineering Graphics	1	
		ENGR 120	Programming for Engineers	2	
	L	ENGR 540 <sup>+</sup>	Introduction to Ship Systems	3	
		MATH 102	Calculus II	4	
		PHYS 102	Engineering Physics I	4	
		PHYS 104	Engineering Physics I Laboratory	0.5	
			Semester Credits:	175	

Semester Credits: 17.5

#### ENGR 510 Summer Sea Term I L 6

### Lower Division - Sophomore Year

		2011		
	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	Ship Systems II	2	
	HUMN 201	World Literature & Culture I	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials	2	
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	Ship Systems I	2	
	HUMN 202	World Literature & Culture II	3	
	MATH 212	Differential Equations	4	
		Semester Credits:	19	

#### ENGR 520 Summer Sea Term II ENGR 521 Cadet Comm Vessel Shipping OR L L 6 6

### **Upper Division -**

			pper D	
	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	ENGR 543 <sup>+</sup>	Ship Systems III	3	
	HIST 101	American Civilization I	3	
		Semester Credits:	: 18	

- Ju	nior Year			
	ENGR 347	Strength of Materials	3	
	or *CHEM 212	Materials Science I	5	
	ENGR 351	Heat Transfer	3	
	ENGR 354+	Marine Engineering Design I	3	
	ENGR 390	Applied Electronics	3	
	<b>ENGR 424</b>	HVAC System Op & Mgmt	3	
L	<b>ENGR 544</b>	Ship Systems IV	4	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	21	
L L		Nautical Operations: Safety	-	

L	ENGR 516	Engine License Seminar	0	
L	ENGR 530	Summer Sea Term III	5	
L	PS 412	Medical Care Provider	1	

ENGR 314 Engineering Economics

ENGR 423 HVAC System Design

L

ENGR 350<sup>+</sup> Automation & Control Systems

ENGR 425 Facilities Engineering Design I

ENGR 371 Applied Naval Architecture

L	ENGR 530	Summer Sea Term III	5		
L	PS 412	Medical Care Provider	1		
		U	pper D	Divisi	ion - Senior Year

 Semor	1 041			
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 349	<b>Transport Processes Laboratory</b>	1	
	<b>ENGR 426</b>	Facilities Engineering Design II	4	
	ENGR 444	Engr Project Management	3	
	HIST 102	American Civilization II	3	
		Free Elective	3	
		Semester Credits:	15	

USCG License Exam:

Lower Division Credits:

Upper Division Credits:

License Credits (L in left column):

Total Credits: 159

83

76 42

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

3

3

3

3

4

16

Semester Credits:

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

### **B.E. in Facilities Engineering with Internship**

### **Fall Semester**

	LOW	ver Div	/15101
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	

### Lower Division - Freshman Year

### **Spring Semester**

TIC	siinan i cai			
	ENGL 103	Freshman English II for Engineers	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	
	• •	Samastar Cradita	14.5	

CHEM 212 Materials Science I

or \*ENGR 347 Strength of Materials

Semester Credits: 14.5

3

3

3

3

4

16

		Low	er Divi	ision	- Sop	homo	re Year
	ENGR 242	Statics	3				CHEM
	HUMN 201	World Literature & Culture I	3			or	*ENGR
	MATH 211	Calculus III	4				ENGR
	PHYS 201	Engineering Physics II	4				ENGR
Γ	PHYS 203	Engineering Physics II Laboratory	0.5				HUMN
Γ							MATH
_		Semester Credits:	14.5				

 4
 ENGR 244
 Dynamics

 4
 ENGR 290
 Circuit Analysis

 0.5
 HUMN 202
 World Literature & Culture II

 MATH 212
 Differential Equations

Semester Credits:

ENGR 526 Industrial Internship I

[	3	
		-

15

Semester Credits:

		Upper l	Division	- Jur	nior Year
ENGR 341	Fluid Mechanics	3			ENG
ENGR 344	Thermodynamics	3			or *CHE
ENGR 345	Engineering Statistical Analysis	3			ENC
ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3			ENG
HIST 101	American Civilization I	3			ENG
					ENC
	Semester Credit	s: 15			

ENGR 347	Strength of Materials	3	
or *CHEM 212	Materials Science I	5	
ENGR 351	Heat Transfer	3	
ENGR 354+	Marine Engineering Design I	3	
ENGR 390	Applied Electronics	3	
<b>ENGR 424</b>	HVAC System Op & Mgmt	3	
	Semester Credits:	15	

ENGR 536	Industrial Internship II	3	

Alternate Internship Choice:

ENGR 538 Extended Industrial Internship 6

### **Upper Division - Senior Year**

ENGR 314	Engineering Economics	3	
ENGR 350+	Automation & Control Systems	3	
ENGR 423	HVAC System Design	3	
ENGR 425	Facilities Engineering Design I	4	
	Engineering Elective	3	
•		1.6	

Semester Credits: 16

ENGR 348	Strength of Materials Laboratory	1	
ENGR 349	Transport Processes Laboratory	1	
<b>ENGR 426</b>	Facilities Engineering Design II	4	
ENGR 444	Engr Project Management	3	
HIST 102	American Civilization II	3	
	Free Elective	3	
	~ ~ !!		

Semester Credits: 15

Lower Division Credits:	
Upper Division Credits:	
Total Credits:	

63	
64	
127	

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

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

## **B.E.** in Marine Engineering with Engine License

### **Fall Semester**

		Lov	ver Div	vision	- Fre	shman Year
	CHEM 121	General Chemistry I	3			ENG
	CHEM 122	General Chemistry I Laboratory	1			ENG
	ENGL 101	Freshman English I	3			ENG
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2		L	ENGR
	LEAD 101	Leadership/Maritime Experience	1			MATI
	MATH 101	Calculus I	4			PHY
L	PS 103	Water Safety & Survival	1			PHY
L	PS 112 <sup>+</sup>	STCW Basic Training	2			
		Semester Credits:	17		-	

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### **Spring Semester**

s 3	
1	
2	
3	
4	
4	
0.5	
its: 17.5	
	$ \begin{array}{c c} 1 \\ 2 \\ 3 \\ 4 \\ 4 \\ 0.5 \\ \end{array} $

#### ENGR 510 Summer Sea Term I 6

### Lower Division - Sophomore Year

		LUW		131011
	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	ENGR 542	Ship Systems II	2	
	HUMN 201	World Literature & Culture I	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials	5	
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	<b>ENGR 541</b>	Ship Systems I	2	
	HUMN 202	World Literature & Culture II	3	
	MATH 212	Differential Equations	4	
		Semester Credits:	19	

ENGR 520 Summer Sea Term II OR L ENGR 521 Cadet Comm Vessel Shipping L 6 6

Semester Credits:

### **Upper Division - Junior Year**

L		-							
3		Ĩ		ENGR 345	Engineering Statistical Analysis	3			
3		Ĩ		ENGR 348 Strength of Materials Laboratory					
3	Ĩ		ENGR 351	Heat Transfer	3				
		I		ENGR 354+	Marine Engineering Design I	3			
3		Ĩ	ENGR 390 Applied Electronics						
3		Ĩ	L	ENGR 544	Ship Systems IV	4			
2		I							
17		Ĩ			Semester Credits:	17			

Semester Credits: 17

L	ENGR 516	Engine License Seminar	0	
L	ENGR 530	Summer Sea Term III	5	
L	PS 412	Medical Care Provider	1	

ENGR 341 Fluid Mechanics

ENGR 344 Thermodynamics ENGR 347 Strength of Materials

ENGR 380<sup>+</sup> Intro to Electric Machinery

NAUT 308 Nautical Operations: Safety

or \*CHEM 212 Materials Science I

ENGR 543<sup>+</sup> Ship Systems III

	ENGR 314	Engineering Economics	3	
L	ENGR 371	Applied Naval Architecture	3	
	ENGR 423	HVAC System Design	3	
	or ENGR 454	Vibrations	5	
	ENGR 440 <sup>+</sup>	Marine Engineering Design II	3	
	ENGR 453	Modern Concepts	3	
	HIST 101	American Civilization I	3	
		Semester Credits:	18	

### **Upper Division - Senior Year**

ENGR 349	Transport Processes Laboratory	1	
ENGR 350 <sup>+</sup>	Automation & Control Systems	3	
ENGR 444	Engr Project Management	3	
ENGR 450	Marine Engineering Design III	4	
ENGR 495	Marine Electrical Systems	3	
HIST 102	American Civilization II	3	
	Semester Credits:	17	

USCG License Exam:

Lower Division Credits: 83

Upper Division Credits:

License Credits (L in left column):

Total Credits: 158

75

42

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

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

## **B.E. in Mechanical Engineering with Engine License**

### Fall Semester

		Lov	ver Div	v18101
	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	PS 103	Water Safety & Survival	1	
L	PS 112 <sup>+</sup>	STCW Basic Training	2	
		Semester Credits:	17	

### **Spring Semester**

on -	n - Freshman Year						
		ENGL 103	Freshman English II for Engineers	3			
		ENGR 100	Engineering Graphics	1			
		ENGR 120	Programming for Engineers	2			
	L	ENGR 540*	Introduction to Ship Systems	3			
		MATH 102	Calculus II	4			
		PHYS 102	Engineering Physics I	4			
T		PHYS 104	Engineering Physics I Laboratory	0.5			
]	-		Semester Credits:	17.5			

L ENGR 510 Summer Sea Term I 6

### Lower Division - Sophomore Year

		Low		101011
	ENGR 242	Statics	3	
L	ENGR 503+	Manufacturing Processes I	1	
L	<b>ENGR 542</b>	Ship Systems II	2	
	HUMN 201	World Literature & Culture I	3	
	MATH 211	Calculus III	4	
	PHYS 201	Engineering Physics II	4	
	PHYS 203	Engineering Physics II Laboratory	0.5	
		Semester Credits:	17.5	

	CHEM 212	Materials Science I	3	
	or *ENGR 347	Strength of Materials	5	
	ENGR 244	Dynamics	3	
	ENGR 290	Circuit Analysis	3	
L	ENGR 504+	Manufacturing Processes II	1	
L	ENGR 541	Ship Systems I	2	
	HUMN 202	World Literature & Culture II	3	
	MATH 212	Differential Equations	4	
		Semester Credits:	19	

 L
 ENGR 520
 Summer Sea Term II
 6
 OR
 L
 ENGR 521
 Cadet Comm Vessel Shipping
 6

### **Upper Division - Junior Year**

		- 1		
	ENGR 344	Thermodynamics	3	
	ENGR 347	Strength of Materials	2	
	or * CHEM 212	Materials Science I	3	
	ENGR 380 <sup>+</sup>	Intro to Electric Machinery	3	
L	ENGR 543 <sup>+</sup>	Ship Systems III	3	
	HIST 101	American Civilization I	3	
L	NAUT 308	Nautical Operations: Safety	2	
		Semester Credits:	17	

Semester	cicuits.	1 /	

L	ENGR 516	Engine License Seminar	0	
L	ENGR 530	Summer Sea Term III	5	
L	PS 412	Medical Care Provider	1	

	ENGR 312	Machine Design	3	
	ENGR 341	Fluid Mechanics	3	
	ENGR 345	Engineering Statistical Analysis	3	
	ENGR 351	Heat Transfer	3	
	ENGR 390	Applied Electronics	3	
L	ENGR 544	Ship Systems IV	4	
			10	

Semester Credits: 19

	ENGR 348	Strength of Materials Laboratory	1	
L	ENGR 371	Applied Naval Architecture	3	
	<b>ENGR 418</b> <sup>+</sup>	Mechanical Engr Design I	4	
	ENGR 454	Vibrations	3	
	ENGR 456	Computer Aided Engineering	3	
	HIST 102	American Civilization II	3	
		Semester Credits:	17	

## Upper Division - Senior Year

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

USCG License Exam:

Lower Division Credits:

83

76

42 159

Upper Division Credits:

License Credits (L in left column):

Total Credits:

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

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

### B.E. in Mechanical Engineering with Internship

### **Fall Semester**

	LUW		1510
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	
	Semester Credits:	15	

### Lower Division - Freshman Year

### **Spring Semester**

FIU	siinan i cai			
	ENGL 103	Freshman English II for Engineers	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	
-	•	Somaaton Cradita	145	

Semester Credits: 14.5

	L	ower Divis	ion - S	opho	more Year
ENGR 242	Statics	3			CHEM
ENGR 503+	Manufacturing Processes I	1			or *ENGR
HUMN 201	World Literature & Culture I	3			ENGR
MATH 211	Calculus III	4			ENGR
PHYS 201	Engineering Physics II	4			HUMN
PHYS 203	Engineering Physics II Laboratory	0.5			MATH
	Semester Credit	ts: 15.5			

CHEM 212	Materials Science I	3	
or *ENGR 347	Strength of Materials	5	
ENGR 244	Dynamics	3	
ENGR 290	Circuit Analysis	3	
HUMN 202	World Literature & Culture II	3	
MATH 212	Differential Equations	4	
	Semester Credits:	16	

ENGR 526 Industrial Internship I

3		
Unnor D	ivision - Junior Year	

	- ]		-				
ENGR 344	Thermodynamics	3	[	ENGR 312	Machine Design	3	
ENGR 347	Strength of Materials	2	Ĩ	ENGR 341	Fluid Mechanics	3	
or * CHEM 212	Materials Science I	3	Ĩ	ENGR 345	Engineering Statistical Analysis	3	
ENGR 380+	Intro to Electric Machinery	3	Ĩ	ENGR 351	Heat Transfer	3	
HIST 101	American Civilization I	3	Ĩ		Electrical Engineering Elective	3	
	Free Elective	3	[				
	Semester Credits:	15	Ĩ		Semester Credits:	15	
			-				
ENGR 536	Industrial Internship II	3	Ĩ				

Alternate Internship Choice:

ENGR 538 Extended Industrial Internship 6

### **Upper Division - Senior Year**

<b>ENGR 418</b> <sup>+</sup>	Mechanical Engr Design I	4	
ENGR 454	Vibrations	3	
ENGR 456	Computer-Aided Engineering	3	
HIST 102	American Civilization II	3	
	Engineering Elective	3	
•	Samastar Cradita:	16	

Semester Credits: 16

~~~	inor rear			
	ENGR 314	Engineering Economics	3	
	ENGR 348	Strength of Materials Laboratory	1	
	ENGR 349	Transport Processes Laboratory	1	
	ENGR 354+	Marine Engineering Design I	3	
	<b>ENGR 419</b> <sup>+</sup>	Mechanical Engr Design II	4	
		Engineering Elective	3	
		G ( 1)	1.7	

Semester Credits: 15

Lower Division Credits Upper Division Credits: Total Credits:

:	64	
:	64	
:	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.

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

## B.E. in Naval Architecture with Deck License

#### **Fall Semester**

### **Spring Semester**

	ran Semester			I	[[-+ + + +]	Lunan Vaan		
		1	VISIO	n - I 1	res	hman Year	Encloser Enclick II for Encircore	2
	CHEM 121 General Chemistry I CHEM 122 General Chemistry I Laboratory	3		ł			Freshman English II for Engineers Engineering Graphics	3
	ENGL 101 Freshman English I	3		ł			Programming for Engineers	2
	ENGL 101 Presiman English 1 ENGR 110 <sup>+</sup> Intro to Engineering Practice	2		ł		MATH 102		4
	LEAD 101 Leadership/Maritime Experience	1		$\frac{1}{2}$			Engineering Physics I	4
	MATH 101 Calculus I	4		ł			Engineering Physics I Laboratory	0.5
T	PS 103 Water Safety & Survival	4		$\frac{1}{2}$	L		Intro to Vessel Ops & Seamanship	1
L	PS 112 <sup>+</sup> STCW Basic Training	2		ł	L		Navigation I: Intro to Navigation	4
L	Semester Credits:			ł	L	NAVO 112	Semester Credits:	19.5
	Schester Credits.	1/		1			Semester Creans.	19.5
T	MT 510 Summer Sea Term I	6		Ī				
L	WII 510 Summer Sea Term I	0		1				
	Lov	ver Div	ision	1 - S	onh	omore Year		
	ENGR 242 Statics	3	15101	1-5	opn		Materials Science I	
	HUMN 201 World Literature & Culture I	3		ł			Strength of Materials	3
	MATH 211 Calculus III	4		ł		ENGR 244		3
L	METE 201 <sup>+</sup> Meteorology for Mariners	3		ł			Circuit Analysis	3
L	PHYS 201 Engineering Physics II	4		ł			World Literature & Culture II	3
	PHYS 203 Engineering Physics II Laboratory	0.5		ł			Differential Equations	4
	FILLS 203 Eligineering Flysics II Laboratory	0.5		$\frac{1}{2}$	L		Navigation II: Oceans	4
	Semester Credits:	17.5		$\frac{1}{2}$	L	NAVG 212	Semester Credits:	20
	Semester Credits.	17.5		1			Semester Credits.	20
т	MT 520 Summer Sea Term II	6		OR	L	MT 521	Cadet Comm Vessel Shipping	6
L	WI 520 Summer Sea Term II	0		ΟΛ	L	WIT 521	Cadet Comm Vesser Shipping	0
	I	nnor T	livici	ion	T	nior Year		
	ENGR 347 Strength of Materials	pper L	11151	1011 - ]	Jui		Fluid Mechanics	3
	or * CHEM 212 Materials Science I	3		ł			Thermodynamics	3
L	ENGR 363 Ship Statics	3		ł			Ship Structure	4
L	<b>^</b>	3		ł			Ship Design I	4
	ENGR 365 <sup>+</sup> Ship Form and Graphics ENGR 380 <sup>+</sup> Intro to Electric Machinery	3		ł	L	NAUT 308	Nautical Operations: Safety	2
L	NAUT 314 Rules of the Road	2		ł	L		Intgrtd Bridge Sys & Voyage Plannin	4
L	NAUT 315 Intro to Integrated Bridge Systems	3		ł	L	NAVO 512	inight Bridge Sys & Voyage Flamm	7
L	Semester Credits:			ł				
	Semester credits.	17					Semester Credits:	20
				1			Semester Credits:	20
T	MT 530 Summer See Term III	5		I		* Students wi		
L	MT 530 Summer Sea Term III PS 412 Medical Care Provider	5		Ĭ			shing to transfer to a Mechanical Engineering	
L L	MT 530 Summer Sea Term III PS 412 Medical Care Provider	5						
L L	PS 412 Medical Care Provider	1	)iviei	   	- Sei	program at an	shing to transfer to a Mechanical Engineering	
L L	PS 412 Medical Care Provider	1 Ipper I	Divisi	_           	- Sei	program at an nior Year	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course.	
L L	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis	1 <b>pper I</b> 3	Divisi	ion -	- Sei	program at an nior Year ENGR 348	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory	1
L	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis ENGR 461 <sup>+</sup> Ship Design II	1 <b>pper I</b> 3 4	Divisi	ion -	- Sei	program at an nior Year ENGR 348 ENGR 354 <sup>+</sup>	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I	<u>1</u> 3
	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis ENGR 461 <sup>+</sup> Ship Design II ENGR 462 <sup>+</sup> Ship Resistance and Propulsion	1 <b>pper I</b> 3 4 3	Divisi	ion -	- Sei	program at an hior Year ENGR 348 ENGR 354 <sup>+</sup> ENGR 471 <sup>+</sup>	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III	1 3 4
	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis ENGR 461 <sup>+</sup> Ship Design II ENGR 462 <sup>+</sup> Ship Resistance and Propulsion ENGR 472 <sup>+</sup> Sailboat Principles & Design	1 <b>pper I</b> 3 4	Divisi	ion -	- Sei	program at an nior Year ENGR 348 ENGR 354 <sup>+</sup> ENGR 471 <sup>+</sup> ENGR 473	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics	1 3 4 3
	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis ENGR 461 <sup>+</sup> Ship Design II ENGR 462 <sup>+</sup> Ship Resistance and Propulsion ENGR 472 <sup>+</sup> Sailboat Principles & Design or Engineering Elective	1 <b>pper I</b> 3 4 3 3	Divisi	ion -	- Sei	program at an nior Year ENGR 348 ENGR 354 <sup>+</sup> ENGR 471 <sup>+</sup> ENGR 473 ENGR 476 <sup>+</sup>	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design	1 3 4
	PS 412 Medical Care Provider U ENGR 345 Engineering Statistical Analysis ENGR 461 <sup>+</sup> Ship Design II ENGR 462 <sup>+</sup> Ship Resistance and Propulsion ENGR 472 <sup>+</sup> Sailboat Principles & Design or Engineering Elective HIST 101 American Civilization I	1 3 4 3 3 3 3		ion -		program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective	1 3 4 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability	1 <b>pper I</b> 3 4 3 3 3 3 3		ion -	- Sei	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations	1 3 4 3 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:	1 <b>pper I</b> 3 4 3 3 3 19			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits:	1 3 4 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:	1 <b>pper I</b> 3 4 3 3 3 19			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations	1 3 4 3 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students must	1 <b>pper I</b> 3 4 3 3 3 19			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits: es & Design courses ENGR 472/476.	1 3 4 3 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students mus         9th Semester	1 <b>pper I</b> 3 4 3 3 19 t take a			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits:	1 3 4 3 3 3
	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students mus         9th Semester       HIST 102         HIST 102       American Civilization II	1 <b>pper I</b> 3 4 3 3 3 19 t take a 3			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits: es & Design courses ENGR 472/476. USCG License Exam:	1       3       4       3       3       17
L	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students mustor         9th Semester       HIST 102         MT 412       Deck License Seminar	1 <b>pper I</b> 3 4 3 3 3 19 t take a 3 4			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits: es & Design courses ENGR 472/476. USCG License Exam: Lower Division Credits:	1       3       4       3       3       17       86
L L	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students mus         9th Semester         HIST 102       American Civilization II         MT 412       Deck License Seminar         MT 426*       Maritime Communications	1 <b>pper I</b> 3 4 3 3 3 19 t take a 3 4 3 4 3			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits: es & Design courses ENGR 472/476. USCG License Exam: Lower Division Credits: Upper Division Credits:	1       3       4       3       3       3       17       86       95
L	PS 412       Medical Care Provider         ENGR 345       Engineering Statistical Analysis         ENGR 461*       Ship Design II         ENGR 462*       Ship Resistance and Propulsion         ENGR 472*       Sailboat Principles & Design         or       Engineering Elective         HIST 101       American Civilization I         MT 321       Intro to Cargo Ops & Stability         Semester Credits:       All Naval Architecture students mustor         9th Semester       HIST 102         MT 412       Deck License Seminar	1 <b>pper I</b> 3 4 3 3 3 19 t take a 3 4			L	program at an hior Year ENGR 348 ENGR 354+ ENGR 471+ ENGR 473 ENGR 476+ or MT 322	shing to transfer to a Mechanical Engineering nother SUNY campus should take this course. Strength of Materials Laboratory Marine Engineering Design I Ship Design III Ship Dynamics Power Boat Principles & Design Engineering Elective Marine Cargo Operations Semester Credits: es & Design courses ENGR 472/476. USCG License Exam: Lower Division Credits:	1       3       4       3       3       17       86

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. <sup>+</sup> Students must register for both lecture and laboratory or recitation. Courses in **bold type** are typically limited to the semester shown.

16

Semester Credits:

### B.E. in Naval Architecture with Engine License

#### **Fall Semester**

### **Spring Semester**

		Fall Semester					Spring Semester	
				ision -	- Fre	shman Year	1	1
		General Chemistry I	3				Freshman English II for Engineers	3
		General Chemistry I Laboratory	1				Engineering Graphics	1
		Freshman English I	3				Programming for Engineers	2
		Intro to Engineering Practice	2		L		Introduction to Ship Systems	3
	LEAD 101	Leadership/Maritime Experience	1			MATH 102	Calculus II	4
	MATH 101	Calculus I	4			PHYS 102	Engineering Physics I	4
L	PS 103	Water Safety & Survival	1				Engineering Physics I Laboratory	0.5
L		STCW Basic Training	2					
		Semester Credits:	17		L	•	Semester Credits:	17.5
L	ENGR 510	Summer Sea Term I	6					
		Low	er Divi	ision -	Sopt	iomore Year		
	ENGR 242		3		~		Materials Science I	
L		Manufacturing Processes I	1				Strength of Materials	3
L		Ship Systems II	2			ENGR 244		3
		World Literature & Culture I	3				Circuit Analysis	3
	MATH 211		4		L		Manufacturing Processes II	1
-			4					2
_		Engineering Physics II			L		Ship Systems I	
	PHYS 203	Engineering Physics II Laboratory	0.5				World Literature & Culture II	3
		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				MATH 212	Differential Equations	4
		Semester Credits:	17.5				Semester Credits:	19
L	<b>ENGR 520</b>	Summer Sea Term II	6	0	R L	ENGR 521	Cadet Comm Vessel Shipping	6
		I	nner D	ivisior	1 - Ju	nior Year		
	ENGR 347	Strength of Materials	3	1113101			Fluid Mechanics	3
_		Materials Science I	5		-		Thermodynamics	3
L		Ship Statics	3				Ship Structure	4
		Ship States Ship Form and Graphics	3				Ship Design I	4
		Intro to Electric Machinery	3		т			4
r			-		L		Ship Systems IV	
L		Ship Systems III	3		L	NAUT 308	Nautical Operations: Safety	2
	HIST 101	American Civilization I	3					• •
		Semester Credits:	18				Semester Credits:	20
L		Engine License Seminar	0					
L		Summer Sea Term III	5					
L	PS 412	Medical Care Provider	1					
		I	nner D	ivisiai	n - Se	nior Year		
T	ENGR 345	Engineering Statistical Analysis	3				Strength of Materials Laboratory	1
-		Applied Electronics	3		-		Marine Engineering Design I	3
		Ship Design II			$\vdash$			4
			4		-		Ship Design III	
		Ship Resistance and Propulsion	3		-		Ship Dynamics	3
	FIND 177+	Sailboat Principles & Design	3		-		Power Boat Principles & Design	3
					1	or	Engineering Elective	
_		Engineering Elective						
		Engineering Elective Semester Credits:					American Civilization II Semester Credits:	3 17

Lower Division Credits: 83 Upper Division Credits: 77 License Credits (L in left column): 42

Total Credits: 160

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

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

### B.E. in Naval Architecture with Internship

### **Fall Semester**

Lower	Division	-	Freshman	Yea

### **Spring Semester**

	Fan Semester Low	ver Divisi	on - Fres	shman Year	spring semester	
CHEM 121	General Chemistry I	3			Freshman English II for Engineers	3
	General Chemistry I Laboratory	1			Engineering Graphics	1
ENGL 101	Freshman English I	3			Programming for Engineers	2
	Intro to Engineering Practice	2		MATH 102		4
	Leadership/Maritime Experience	1			Engineering Physics I	4
MATH 101		4			Engineering Physics I Laboratory	0.5
	Swimming and Lifetime Fitness	1				
	Semester Credits:	15		ł	Semester Credits:	14.5
	Low	er Divisio	on - Soph	omore Year		
ENGR 242	Statics	3		CHEM 212	Materials Science I	3
	World Literature & Culture I	3		or *ENGR 347	Strength of Materials	5
MATH 211	Calculus III	4		ENGR 244	Dynamics	3
PHYS 201	Engineering Physics II	4			Circuit Analysis	3
PHYS 203	Engineering Physics II Laboratory	0.5		HUMN 202	World Literature & Culture II	3
				MATH 212	Differential Equations	4
	Semester Credits:	14.5			Semester Credits:	16
ENGR 526	Industrial Internship I	3				
	T	nner Divi	sion - Ju	nior Year		
ENGR 347	Strength of Materials				Fluid Mechanics	3
	Materials Science I	3 —	-	-	Thermodynamics	3
	Ship Statics	3	-		Strength of Materials Laboratory	1
	Ship Form and Graphics	3	-		Ship Structure	4
	Intro to Electric Machinery	3	-		Ship Design I	4
	American Civilization I	3	-	ENGN 500		4
11151 101	Semester Credits:	15			Semester Credits:	15
ENGR 536	Industrial Internship II	3	Т			
	<u> </u>					
	Alternate Internshi	p Choice	:	ENGR 538	Extended Industrial Internship	6
		pper Divi	sion - Se	nior Year		1
ENGR 345	Engineering Statistical Analysis	3		ENGR 354+	Marine Engineering Design I	3
<b>ENGR 461</b> <sup>+</sup>	Ship Design II	4		<b>ENGR 471</b> <sup>+</sup>	Ship Design III	4
ENGR 462+	Ship Resistance and Propulsion	3		ENGR 473	Ship Dynamics	3
	Sailboat Principles & Design	2			Power Boat Principles & Design	2
	Engineering Elective	3			Engineering Elective	3
	Engineering Elective	3			American Civilization II	3
	Semester Credits:	16			Semester Credits:	16
	All Naval Architecture students must	take at le	ast one o	f the Boat Principle	es & Design courses ENGR 472/476.	
					e	
					Lower Division Credits:	63
					Upper Division Credits:	65
					Total Credits:	128

Total Credits: 128

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

### B.S. in International Transportation and Trade with Deck License Fall Semester Spring Semester

		Fail Semester	von Di	vicio	n Ero	shman Year	Spring Semester	
	CS 101	Computer Laboratory		VISIO			Freshman English II	3
		Freshman English I	3				Macroeconomics	3
		Intro to Business & Economics	3		┥ ┝──		American Civilization II	3
		American Civilization I	3			MATH 251		3
		Leadership/Maritime Experience	1		L		Ship Construction & Stability	2
		Applied Calculus I	4		L		Intro to Vessel Ops & Seamanship	1
т		Water Safety & Survival	4				Navigation I: Intro to Navigation	4
L L						NAVO 112		4
L	PS 112*	STCW Basic Training Semester Credits:	2 18				Constant Constitution	19
		Semester Credits.	10		1		Semester Credits:	19
L	MT 510	Summer Sea Term I	6		]			
		Low	er Div	zisior	n - Sopl	nomore Year		
	GBAC 311	Financial Accounting	3			r	Managerial Accounting	3
		Microeconomics	3				Admiralty Law	3
		Business Law	3				Fundamentals of Marketing	3
		World Literature & Culture I	3		┥┝─		World Literature & Culture II	3
L		Intro to Cargo Ops & Stability	3		L		Meteorology for Mariners	3
L		Rules of the Road	2		L		Navigation II: Oceans	4
Г	NAUT 514	Semester Credits:	17			NAVO 212	Semester Credits:	19
		Semester Creans.	1/		1		Semester Creatis.	19
L	MT 520	Summer Sea Term II	6		OR L	MT 521	Cadet Comm Vessel Shipping	6
		U	pper l	Divis	ion - Jı	inior Year		
		Technical Writing	3		] [	GBEC 427	Financial Management	3
	GBEC 424	Intl. Economics and Finance	3			GBEC 428	Economic Geography	3
	GBTT 251	Transportation Systems	3		1	GBTT 252	Business of Shipping	3
L		Marine Cargo Operations	3		L		Nautical Operations: Safety	2
L		Intro to Integrated Bridge Systems	3		L		Intgrtd Bridge Sys & Voyage Plannir	
		General Physics I	3				LAS Elective	3
		General Physics I Lab	0.5					
		Semester Credits:	18.5		1 -		Semester Credits:	18
L	MT 530	Summer Sea Term III	5	T	Ţ			
L		Medical Care Provider	1		1			L
	10.11			<u> </u>	1			
	CDI W 425			Divis	ion - Se	enior Year		<u> </u>
$\left  - \right $		Environmental Law & Policy	3		$+ \vdash$		Seminar: Transport. Economics	3 —
		Organizational Management	3	-	┤┝		Seminar: Strategy and Policy	
		Marine Insurance	3		┥┝		International Logistics	3
L		Deck License Seminar	4		$\downarrow \vdash$		Import/Export & Traffic Mgt.	3
L	MT 426	Maritime Communications	3				International Business	3
		International Studies Humanities Elective	3		$\downarrow \vdash$		Operations Research	3
					L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic)	3
		Semester Credits:	19		]		Semester Credits:	18
	Internationa	al Studies Humanities Electives					USCG License Exam:	
	ENGL 416	Literature of the Sea					Lower Division Credits:	85
	ENGL 418	Contemporary Literature					Upper Division Credits:	79.5
		Major British Authors					License Credits (L in left column):	62
		Topics in European Civilization I-II					Total Credits:	
		Hist of American Foreign Policy						·I
		Vietnam and America						
		History of Technology						
		Twentieth Century Technology						
		Sea Power and Maritime Affairs						
		Evolution of Warfare						

NVSC 311 Evolution of Warfare

Foreign language courses

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.

## B.S. in International Transportation and Trade with Internship

### **Fall Semester**

	Low	er Div	visio	n - F	res	hman Year	
CS 101	Computer Laboratory	1				ENGL 102	Freshman English I
ENGL 101	Freshman English I	3				GBEC 121	Macroeconomics
GBUS 100	Intro to Business & Economics	3				GBMG 345	Fundamentals of M
LEAD 101	Leadership/Maritime Experience	1				HIST 101	American Civilizat
MATH 090	Intro to College Mathematics	4				MATH 251	Statistics
or MATH 111	Applied Calculus I	4					
	GenEd: Natural Science	3					
	Semester Credits:	15					S

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**Spring Semester** 

Semester Credits:

	Low	er Div	ision	1 - S	Sop	homore Year			
ENGL 452	Technical Writing	3		I		GBAC 315	Managerial Accounting	3	
GBAC 311	Financial Accounting	3				GBLW 431	Business Law	3	
GBEC 122	Microeconomics	3				HUMN 202	World Literature & Culture II	3	
HIST 102	American Civilization II	3		[			Free Elective	3	
HUMN 201	World Literature & Culture I	3		I			LAS Elective	3	
	Semester Credits:	15		I			Semester Credits:	15	
				-					

	Ul	pper D	Divisi	on -	Ju	ınior Year			
GBEC 424	Intl. Economics and Finance	3				GBEC 427	Financial Management	3	
GBLW 433	Admiralty Law	3		[		GBEC 428	Economic Geography	3	
GBMG 341	Organizational Management	3		[		GBTT 252	Business of Shipping	3	
GBTT 251	Transportation Systems	3		[			International Studies Elective	3	
	LAS Elective	3		[			LAS Elective	3	
	Semester Credits:	15		-			Semester Credits:	15	
GBUS 525	ITT Internship / Work Experience	6		OR		GBUS 526	ITT Study Abroad	6	

**Upper Division - Senior Year** 

		rr	 ·	~~~~		
GBLW 435	Environmental Law & Policy	3			GBEC 429	Seminar: Transport. Economics
GBTT 451	Marine Insurance	3			or GBMG 440	Seminar: Strategy and Policy
GBTT 453	Import/Export & Traffic Mgt.	3			GBTT 351	International Logistics
GBTT 457	Port and Terminal Operations	3			GBUS 300	International Business
	International Studies Elective	3			MATH 446	Operations Research
						Phys Ed Elective
	Semester Credits:	15				Semester Cred

Semester Credits:

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

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### **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 401-02 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 526 ITT Study Abroad*
HIST 425 History of Technology	MT 408 International Safety Management
HIST 426 Twentieth Century Technology	MT 435 Maritime Security
NVSC 102 Sea Power and Maritime Affairs	* Other study abroad courses
NVSC 311 Evolution of Warfare	to be evaluated by Dept Chair
Foreign language courses	

### B.S. in Marine Environmental Science with Deck License, Marine Biology Minor

#### **Fall Semester**

		LOW	er Div	/1510
	BIO 201+	General Biology I	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	PS 112 <sup>+</sup>	STCW Basic Training	2	
		Semester Credits:	18	

### **Spring Semester**

Low	ver Div	visio	n - F	res	hman Year			
	4		1 1		BIO 202+	General Biology II	4	
	1				ENGL 102	Freshman English II	3	
	3				MATH 112	Applied Calc II (or MATH 102)	3	
	3		1 1	L	NAUT 102	Intro to Vessel Ops & Seamanship	1	
e	1			L	NAVG 112	Navigation I: Intro to Navigation	4	
	4				OCEA 101	General Oceanography	3	
	2		1 1		OCEA 102	General Oceanography Lab	1	
			1 1	L	PS 103	Water Safety & Survival	1	
dits:	18		'			Semester Credits:	20	

### Lower Division - Sophomore Year

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		LOW		15101
	CHEM 121	General Chemistry I	3	
	CHEM 122	General Chemistry I Laboratory	1	
	HIST 101	American Civilization I	3	
	HUMN 201	World Literature & Culture I	3	
L	METE 201+	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	
		Semester Credits:	18.5	

MT 510 Summer Sea Term I

L

	BIO 210	Ecology	3	
	CHEM 123	General Chemistry II	3	
	CHEM 124	General Chemistry II Laboratory	1	
	HIST 102	American Civilization II	3	
	HUMN 202	World Literature & Culture II	3	
L	MT 322+	Marine Cargo Operations	3	
L	NAVG 212	Navigation II: Oceans	4	
		Semester Credits:	20	

#### MT 520 Summer Sea Term II OR L MT 521 Cadet Comm Vessel Shipping L 6 6

		e	PPCI D	
(2)	BIO 315	Marine Biology	3	
	CHEM 311	Environmental Chemistry	3	
	CHEM 312	Environmental Chemistry Lab	1	
	MATH 251	Statistics	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	

#### **Upper Division - Junior Year**

(1)	BIO 415	Ichthyology	3	
	CHEM 321	Organic Chemistry	3	
	CHEM 322	Organic Chemistry Laboratory	1	
	ES 303	GIS	3	
L	NAUT 308	Nautical Operations: Safety	2	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannir	4	
		MES Elective	3	
		~ ~ 11	1.0	

Semester Credits: 19

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

#### **Upper Division - Senior Year**

(1)	BIO 320 <sup>+</sup>	Invertebrate Zoology	4	
	ES 451 <sup>+</sup>	Field Methods in Environ. Science	4	
	GEOL 301	General Geology	3	
L	MT 412	Deck License Seminar	4	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
		Semester Credits:	18	

-					
	(2)	BIO 416	Fisheries Science	3	
		ES 430	<b>Environmental Impact Assessment</b>	3	
		GBLW 435	Environmental Law & Policy	3	
	L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic.)	3	
		OCEA 402	Estuaries & Coastal Processes	3	
			MES Elective	3	
			Semester Credits:	18	

Semester Credits: 18

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

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.

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

### B.S. in Marine Environmental Science with Internship, Marine Biology Minor

### **Fall Semester**

	Lov	ver Div	vision -	Fres	hman Year
BIO	01 <sup>+</sup> General Biology I	4			BIO
CS	101 Computer Laboratory	1			ENGI
ENGL	101 Freshman English I	3			MATH
ES 1	01 <sup>+</sup> Intro to Environmental Science	3			OCEA
LEAD	101 Leadership/Maritime Experience	1			OCEA
MATH	111 Applied Calc I (or MATH 101)	4			PH
	Semester Credits:	16			

### **Spring Semester**

- Freshinan real			
BIO 202+	General Biology II	4	
ENGL 102	Freshman English II	3	
MATH 112	Applied Calc II (or MATH 102)	3	
OCEA 101	General Oceanography	3	
OCEA 102	General Oceanography Lab	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	
HIST 101	American Civilization I	3	
HUMN 201	World Literature & Culture I	3	
METE 201+	Meteorology for Mariners	3	
PHYS 211	General Physics I	3	
PHYS 213	General Physics I Lab	0.5	
	Semester Credits:	16.5	

CHEM 124 General Chemistry II Laboratory 1 HIST 102 American Civilization II 3 HUMN 202 World Literature & Culture II 3 Semester Credits: 13

CHEM 123 General Chemistry II

BIO 210 Ecology

### **Upper Division - Junior Year**

(2)	BIO 315	Marine Biology	3	
	CHEM 311	Environmental Chemistry	3	
	CHEM 312	Environmental Chemistry Lab	1	
	MATH 251	Statistics	3	
		Free Elective	3	
		Semester Credits:	13	

ounior real					
(1)	BIO 415	Ichthyology	3		
	CHEM 321	Organic Chemistry	3		
	CHEM 322	<b>Organic Chemistry Laboratory</b>	1		
	ES 303	GIS	3		
		MES Elective	3		
Semester Credits:			13		

ES 505	Environmental Science Internship	Ι	3	
ES 515	Environmental Science Internship	Π	3	

**Upper Division - Senior Year** 

(1)	BIO 320 <sup>+</sup>	Invertebrate Zoology	4	(	(2)	BIO 416	<b>Fisheries Science</b>
	ES 451 <sup>+</sup>	Field Methods in Environ. Science	4			ES 430	<b>Environmental Impact A</b>
	GEOL 301	General Geology	3			GBLW 435	Environmental Law & Pol
		Free Elective	3			<b>OCEA 402</b>	Estuaries & Coastal Proc
							MES Elective
		Semester Credits:	14				Semeste
		Free Elective	3	-		OCEA 402	Estuaries & Coastal MES Elective

(2)	BIO 416	Fisheries Science	3	
	ES 430	<b>Environmental Impact Assessment</b>	3	
	GBLW 435	Environmental Law & Policy	3	
	OCEA 402	Estuaries & Coastal Processes	3	
		MES Elective	3	
		Semester Credits:	15	

Lower Division Credits: 60.5 61

Upper Division Credits: Total Credits: 121.5

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### B.S. in Marine Environmental Science with Deck License, Meteorology and Oceanography Minor

	Fall Semester			Spring Semester				
Т			sion - Fresh					
	BIO 201 <sup>+</sup> General Biology I	4			General Biology II	4		
	CS 101 Computer Laboratory	1			Freshman English II	3		
	ENGL 101 Freshman English I	3			Applied Calc II (or MATH 102)	3		
	ES 101 <sup>+</sup> Intro to Environmental Science	3	L		Intro to Vessel Ops & Seamanship	1		
	LEAD 101 Leadership/Maritime Experience	1	L		Navigation I: Intro to Navigation	4		
	MATH 111 Applied Calc I (or MATH 101)	4			General Oceanography	3		
,	PS 112 <sup>+</sup> STCW Basic Training	2			General Oceanography Lab	1		
			L	PS 103	Water Safety & Survival	1		
	Semester Credits:	18			Semester Credits:	20		
	MT 510 Summer Sea Term I	6						
	Lar							
	CHEM 121 General Chemistry I	3	sion - Sophor	BIO 210	Ecology	3		
	CHEM 122 General Chemistry I Laboratory	1			General Chemistry II	3		
1	HIST 101 American Civilization I	3			<b>General Chemistry II Laboratory</b>	1		
T	HUMN 201 World Literature & Culture I	3			American Civilization II	3		
	METE 201 <sup>+</sup> Meteorology for Mariners	3			World Literature & Culture II	3		
	MT 250 Ship Construction & Stability	2	L	MT 322 <sup>+</sup>	Marine Cargo Operations	3		
	PHYS 211 General Physics I	3	L		Navigation II: Oceans	4		
	PHYS 213 General Physics I Lab	0.5						
	MT 520 Summer Sea Term II	6	OR L	MT 521	Cadet Comm Vessel Shipping	6		
	I	nner Di	vision - Juni	or Year				
	CHEM 311 Environmental Chemistry	3			Organic Chemistry	3		
	CHEM 312 Environmental Chemistry Lab	1			Organic Chemistry Laboratory	1		
	MATH 251 Statistics	3		ES 303		3		
	MT 321 Intro to Cargo Ops & Stability	3	L		Nautical Operations: Safety	2		
T	NAUT 314 Rules of the Road	2	L		Intgrtd Bridge Sys & Voyage Plannir	4		
	NAUT 315 Intro to Integrated Bridge Systems	3	(1)		Marine Biogeochemistry	3		
)	OCEA 425 Marine Environmental Issues	3			MES Elective	3		
/	Semester Credits:	18			Semester Credits:	19		
,	MT 530 Summer Sea Term III	5						
_	PS 412 Medical Care Provider	1						
_		1						
	U ES 451 <sup>+</sup> Field Methods in Environ. Science		vision - Seni		Environmental Impact Assessment	2		
+		-			Environmental Law & Policy	3		
)	GEOL 301 General Geology	3				3		
/	METE 350 <sup>+</sup> Synoptic Meteorology	4	(2)		Dynamic Meteorology	3		
-	MT 412 Deck License Seminar	4	L		Bridge Resource Mgmt (Unltd Lic.)	3		
-	MT 426 <sup>+</sup> Maritime Communications	3		<b>UCEA 402</b>	Estuaries & Coastal Processes	3		
					MES Elective	3		
	Semester Credits:	18			Semester Credits:	18		
					USCG License Exam:			
					Lower Division Credits:	88.5		
					Upper Division Credits:	79		
					License Credits (Lin left column):	62		

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.

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

<sup>+</sup> Students must register for both lecture and laboratory or recitation.

License Credits (L in left column):

62

Total Credits: 167.5

### B.S. in Marine Environmental Science with Internship, Meteorology and Oceanography Minor

### **Fall Semester**

	Low	ver Div	vision -	- Fres	hman Year
BIO 201+	General Biology I	4			BIO
CS 101	Computer Laboratory	1			ENGI
ENGL 101	Freshman English I	3			MATH
ES 101 <sup>+</sup>	Intro to Environmental Science	3			OCEA
LEAD 101	Leadership/Maritime Experience	1			OCEA
MATH 111	Applied Calc I (or MATH 101)	4			PI
	Semester Credits:	16			

#### **Spring Semester**

I I Ca	innan i cai			
	BIO 202+	General Biology II	4	
	ENGL 102	Freshman English II	3	
	MATH 112	Applied Calc II (or MATH 102)	3	
	OCEA 101	General Oceanography	3	
	OCEA 102	General Oceanography Lab	1	
	PE 100	Swimming and Lifetime Fitness	1	
		Semester Credits:	15	

Lower	Division	- Sophome	ore Year

CHEM 121	General Chemistry I	3		BIO 210	Ecology
CHEM 122	General Chemistry I Laboratory	1		<b>CHEM 123</b>	General
HIST 101	American Civilization I	3		<b>CHEM 124</b>	General
HUMN 201	World Literature & Culture I	3		HIST 102	American
METE 201+	Meteorology for Mariners	3		HUMN 202	World Li
PHYS 211	General Physics I	3			
PHYS 213	General Physics I Lab	0.5			
	Semester Credits:	16.5			

**Chemistry II** 3 Chemistry II Laboratory 1 n Civilization II 3 iterature & Culture II 3 Semester Credits: 13

			Upper Di	visior	ı - Jur	nior Y	ear
	CHEM 311	Environmental Chemistry	3			(	CHE
	CHEM 312	Environmental Chemistry Lab	1			(	CHE
	MATH 251	Statistics	3				
)	<b>OCEA 425</b>	Marine Environmental Issues	3		(1)		OCI
		Free Elective	3				
		Semester Credits	s: 13				

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

	CHEM 321	Organic Chemistry	3	
	CHEM 322	Organic Chemistry Laboratory	1	
	ES 303	GIS	3	
(1)	OCEA 415	Marine Biogeochemistry	3	
		MES Elective	3	
		Semester Credits:	13	

ES 430 Environmental Impact Assessment

GBLW 435 Environmental Law & Policy

			Upper I	Division	ı - Sen	ior Year
	ES 451 <sup>+</sup>	Field Methods in Environ. Science	e 4			]
	GEOL 301	General Geology	3			GBL
(1)	<b>METE 350</b> <sup>+</sup>	Synoptic Meteorology	4		(2)	MET
		Free Elective	3			OCE
		Semester Credits	: 14			

### METE 408 Dynamic Meteorology **OCEA 402** Estuaries & Coastal Processes **MES** Elective

Semester Credits:

Lower Division Credits:	
Upper Division Credits:	61
Total Credits:	121.

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### **B.S. in Marine Operations with Deck License**

### **Fall Semester**

		Low	ver Div	visio
	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 120 <sup>+</sup>	Primer of Towing	3	
L	PS 103	Water Safety & Survival	1	
L	PS 112 <sup>+</sup>	STCW Basic Training	2	
		Semester Credits:	17	

### **Spring Semester**

	CS 101	Computer Laboratory	1
	ENGL 102	Freshman English II	3
	HIST 101	American Civilization I	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

Lower Division - S	Sophomore Year
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		LU	wer Div	151011
	GBEC 121	Macroeconomics	3	
	HUMN 201	World Literature & Culture I	3	
L	METE 201+	Meteorology for Mariners	3	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		Semester Credits	: 15.5	

	ENGR 540+	Intro to Ship Systems	3	
	GBEC 122	Microeconomics	3	
	HIST 102	American Civilization II	3	
	HUMN 202	World Literature & Culture II	3	
L	NAUT 314	Rules of the Road	2	
L	NAVG 212	Navigation II: Oceans	4	
		Semester Credits:	18	

L MT 521 Cadet Comm

MT 510 Summer Sea Term I

L

Upper	Division	- Junior	Year
opper	DIVISION	Junior	1 Cui

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

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

· Ju	Junior Year				
	CHEM 100	Introductory Chemistry	3		
	GBEC 428	Economic Geography	3		
	GBTT 252	Business of Shipping	3		
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannir	4		
		Humanities Elective	3		
		Semester Credits:	16		

#### **Upper Division - Senior Year**

	<b>GBTT 457</b>	Port and Terminal Operations	3	
L	MT 412	Deck License Seminar	4	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
	MTO 410	Business of Towing	3	
		Humanities Elective	3	
		Semester Credits:	16	

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		GBLW 435	Environmental Law & Policy	3	
		MT 408	International Safety Mgt	3	
		MTO 411	Towing Operations	3	
	L	MTOD 414 <sup>+</sup>	Bridge Resource and Team Mgmt	3	
			Humanities Elective	3	
			LAS Elective	3	
			Constant Constitut	10	

Semester Credits: 18

USCG License Exam:

Lower Division Credits: Upper Division Credits: License Credits (L in left column): 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. Courses in **bold type** are typically limited to the semester shown. <sup>+</sup> Students must register for both lecture and laboratory or recitation.

Vessel Shipping 6		Unnor I	Division - Junior '
	Vessel Shipping	6	

### **B.S. in Marine Operations with Engine License**

### **Fall Semester**

		Lov	ver Di	vision	ı - Fi	resh	man Year
	CS 101	Computer Laboratory	1				CHEN
	ENGL 101	Freshman English I	3				ENGI
	ENGR 110 <sup>+</sup>	Intro to Engineering Practice	2				ENG
	GBUS 100	Intro to Business & Economics	3			L	ENGR
	LEAD 101	Leadership/Maritime Experience	1				MATH
	MATH 111	Applied Calculus I	4			L	M
L	PS 112 <sup>+</sup>	STCW Basic Training	2			L	PS
		Semester Credits:	16				

### **Spring Semester**

res	nman year			
	CHEM 100	Introductory Chemistry	3	
	ENGL 103	Freshman English II for Engineers	3	
	ENGR 100	Engineering Graphics	1	
L	<b>ENGR 540</b>	Intro to Ship Systems	3	
	MATH 112	Applied Calculus II	3	
L	MT 250	Ship Construction & Stability	2	
L	PS 103	Water Safety & Survival	1	
		Semester Credits:	16	

ENGR 510	Summer Sea Term I	6	

L

L

#### Lower Division - Sophomore Year

OR

L

	CHEM 212	Materials Science I	3	
L	ENGR 503+	Manufacturing Process I	1	
L	<b>ENGR 542</b>	Ship Systems II	2	
	GBEC 121	Macroeconomics	3	
	HIST 101	American Civilization I	3	
	HUMN 201	World Literature & Culture I	3	
	PHYS 211	General Physics I	3	
	PHYS 213	General Physics I Lab	0.5	
		Semester Credits:	18.5	

· F	omore rear			
L	ENGR 504+	Manufacturing Process II	1	
L	<b>ENGR 541</b>	Ship Systems I	2	
	HUMN 202	World Literature & Culture II	3	
L	MT 322 <sup>+</sup>	Marine Cargo Operations	3	
	MTO 310	Shipyard Management	3	
	PHYS 214	General Physics II	4	
	PHYS 216	General Physics Lab	0.5	
		Semester Credits:	16.5	

6

<b>ENCR 521</b>	Cadet Comm Vessel Shipping
ENGR 521	Cauer Comm vesser Smpping

			Upper D	Divisi	on - J	lui	nior Year
	<b>ENGR 243</b>	Transport Processes	3				ENG
	ENGR 290	Circuit Analysis	3		1	L	ENC
L	ENGR 543 <sup>+</sup>	Ship Systems III	3				GB
	HIST 102	American Civilization II	3				MAT
	MTOE 201 <sup>+</sup>	Engine Room Resource Mgmt	3		1	L	NAU

ENGR 520 Summer Sea Term II

Semester Credits: 15

L	ENGR 516	Engine License Seminar	0	
L	ENGR 530	Summer Sea Term III	5	
L	PS 412	Medical Care Provider	1	

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

#### **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	

Professional Option Courses:

MT 212	Ship Management
MT 435	Maritime Security
MTO 300	Regulatory Framework
MTO 410	The Business of Towing

ENGR 446	Marine Engine Theory & Appl.	3	
GBLW 435	Environmental Law & Policy	3	
	Humanities Elective	3	
	LAS Elective	3	
	Professional Option	3	
	Semester Credits:	15	

USCG License Exam:

6

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

s:	79	
s:	66	ĺ
):	44	ĺ
s:	145	ĺ

## **B.S. in Marine Transportation with Deck License**

### Fall Semester

Lov	ver Div	vision -	Fres	hman Year	Spring Semester
CS 101 Computer Laboratory	1				Freshman English II
ENGL 101 Freshman English I	3				American Civilization I
GBUS 100 Intro to Business & Economics	3			MATH 251	
LEAD 101 Leadership/Maritime Experience	1		L		Ship Construction & Stability
MATH 111 Applied Calculus I	4		L		Intro to Vessel Ops & Seamanship
L PS 103 Water Safety & Survival	1		L		Navigation I: Intro to Navigation
L PS 112 <sup>+</sup> STCW Basic Training	2				
Semester Credits:	15				Semester Credits:
L MT 510 Summer Sea Term I	6				
Low	er Div	ision -	Soph	omore Year	
GBEC 121 Macroeconomics	3		Ê		Microeconomics
HUMN 201 World Literature & Culture I	3			GBTT 251	Transportation Systems
L METE 201 <sup>+</sup> Meteorology for Mariners	3			HIST 102	American Civilization II
L MT 322 <sup>+</sup> Marine Cargo Operations	3			HUMN 202	World Literature & Culture II
MT 408 International Safety Mgt	3		L	NAUT 314	Rules of the Road
PHYS 211 General Physics I	3		L	NAVG 212	Navigation II: Oceans
PHYS 213 General Physics I Lab	0.5				
Semester Credits:	18.5				Semester Credits:
L MT 520 Summer Sea Term II	6	0.	R L	MT 521	Cadet Comm Vessel Shipping
	-				
	<u> </u>	<u>Division</u>	ı - Jui	nior Year	
ENGL 452 Technical Writing	3				International Economics & Finance
GBEC 428 Economic Geography	3				Environmental Law & Policy
GBLW 431 Business Law	3				Business of Shipping
GBMG 341 Organizational Management	3				Maritime Security
L MT 321 Intro to Cargo Ops & Stability	3		L		Nautical Operations: Safety
L NAUT 315 Intro to Integrated Bridge Systems Semester Credits:	3 18		L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannir Semester Credits:
Semester Credits.	10				Semester Creatis:
L MT 530 Summer Sea Term III	5				
L PS 412 Medical Care Provider	1				
		11			
	<u> </u>	Divisior	ı - Sei	nior Year	
GBUS 300 International Business	3				Seminar: Transport. Economics
L MT 412 Deck License Seminar	4				Seminar: Strategy and Policy
L MT 426 <sup>+</sup> Maritime Communications	3		-		Operations Research
Humanities Elective	3		L	NAUT 416 <sup>+</sup>	Bridge Resource Mgmt (Unltd Lic.)
LAS Elective	3				Humanities Elective
Somestor Credita	16				Professional Option
Semester Credits:	16				Semester Credits:
Professional Option Courses:					
GBAC 311 Finanical Accounting					
GBLW 433 Admiralty Law					USCG License Exam:
GBTT 451 Marine Insurance					F
GBTT 460 Principles of Global Supply Chain Security					Lower Division Credits:
GBUS 400 Maritime Cybersecurity					Upper Division Credits:
MT 404 Environmental Management					License Credits (L in left column):
MTO 410 The Business of Towing					Total Credits:
MTO 411 Towing Operations					E
NAUT 420 Piloting and Shiphandling					
NAUT 460 Coastal Operations					

NAUT 476 Fast Rescue Boat Operations

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

**Spring Semester** 

79.5 152.5

### B.S. in Maritime Studies with Deck License

### Fall Semester

		T		• •		<b>I</b>		
_	CC 101		ver Div	visior	1 - Fr	eshman Year	Freshman English U	2
		Computer Laboratory Freshman English I	3				Freshman English II Intro to Environmental Science	3
_			-		т			-
		Intro to Business & Economics	3		I		Ship Construction & Stability	2
		Leadership/Maritime Experience	1		I		Intro to Vessel Ops & Seamanship	1
_		Applied Calculus I	4		Ι		Navigation I: Intro to Navigation	4
L		Water Safety & Survival	1			NVSC 102	Sea Power & Maritime Affairs	3
L	PS 112 <sup>+</sup>	STCW Basic Training	2					
		Semester Credits:	15				Semester Credits:	16
L	MT 510	Summer Sea Term I	6					
				<u> </u>				
_	CDEC 121	Low Macroeconomics		ision	- Sop	homore Year	Microeconomics	2
_			3					3
_		American Civilization I	3				American Civilization II	3
		World Literature & Culture I	3				World Literature & Culture II	3
_	MATH 251		3		Ι		Rules of the Road	2
-		Meteorology for Mariners	3		Ι		Navigation II: Oceans	4
_	MT 322 <sup>+</sup>	Marine Cargo Operations	3				General Oceanography	3
						OCEA 102	General Oceanography Lab	1
		Semester Credits:	18				Semester Credits:	19
L	MT 520	Summer Sea Term II	6		OR I	MT 521	Cadet Comm Vessel Shipping	6
						-		
		U	pper D	Divisi	on - J	unior Year		
	ENGL 452	Technical Writing	3				Business of Shipping	3
		Environmental Law & Policy	3				US Maritime History to Civil War	
		Transportation Systems	3				US Maritime History Since 1865	3
_		Intro to Cargo Ops & Stability	3				Maritime Security	3
-		Intro to Integrated Bridge Systems	3		I		Nautical Operations: Safety	2
_	NAUT 515	Humanities Elective	3		I		Intgrtd Bridge Sys & Voyage Plannir	4
_		Tumanties Elective	5		-		Humanities Elective	
								2
		Somastar Cradita	19					3
		Semester Credits:	18				Semester Credits:	3 18
L		Summer Sea Term III	18 5					
_		Summer Sea Term III Medical Care Provider	5 1		on - S	enior Year		
	PS 412 HUMN 465	Summer Sea Term III Medical Care Provider U Humanities Research Methods	5 1 pper D		on - S		Semester Credits: Economic Geography	
	PS 412 HUMN 465	Summer Sea Term III Medical Care Provider U	5 1		on - S	GBEC 428	Semester Credits:	18
Ĺ	PS 412 HUMN 465 or ENGL 416	Summer Sea Term III Medical Care Provider U Humanities Research Methods	5 1 pper D		on - S	GBEC 428 HUMN 490	Semester Credits: Economic Geography	18
_	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea	5 1 pper D 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy	18 3 3
	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider Uj Humanities Research Methods Literature of the Sea Deck License Seminar	5 1 <b>pper D</b> 3 4			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.)	18 3 3 3
_	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications	5 1 3 4 3 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective	18           3           3           3           3           3           3           3
_	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective	18           3           3           3           3           3           3           3
Ĺ	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective	5 1 3 4 3 3 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective	18           3           3           3           3           3           3           3
L	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3 3 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective	18           3           3           3           3           3           3           3
L L L L L L	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3 3 3	Divisio		GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective Semester Credits: USCG License Exam:	18       3       3       3       3       3       15
L	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3 3 3	Divisio		GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective Semester Credits: USCG License Exam: Lower Division Credits:	18       3       3       3       3       3       3       15       80
L	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3 3 3	Divisio		GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective Semester Credits: USCG License Exam: Lower Division Credits: Upper Division Credits:	18       3       3       3       3       3       3       15       80       73
L	PS 412 HUMN 465 or ENGL 416 MT 412	Summer Sea Term III Medical Care Provider U Humanities Research Methods Literature of the Sea Deck License Seminar Maritime Communications Humanities Elective Humanities Elective	5 1 3 4 3 3 3			GBEC 428 HUMN 490	Semester Credits: Economic Geography Studies in Maritime Policy Bridge Resource Mgmt (Unltd Lic.) Humanities Elective Law Elective Semester Credits: USCG License Exam: Lower Division Credits:	18       3       3       3       3       3       3       15       80

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

**Spring Semester** 

### **B.S. in Maritime Studies with Internship**

### **Fall Semester**

	LUW		131
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	4	
PE 100	Swimming and Lifetime Fitness	1	
	Semester Credits:	13	

### **Spring Semester**

GBEC 122 Microeconomics

HIST 102 American Civilization II

OCEA 101 General Oceanography

Free Elective

HUMN 202 World Literature & Culture II

OCEA 102 General Oceanography Lab

				1 8		
Low	ver Div	visio	- Freshman Year			
	1		ENGL 102 Fresh	man English II	3	
	3		ES 101 <sup>+</sup> Intro	to Environmental Science	3	
	3		MATH 251 Statis	tics	3	
e	1		METE 201 <sup>+</sup> Mete	orology for Mariners	3	
	4		NVSC 102 Sea I	Power & Maritime Affairs	3	
	4					
	1					
dita	12		· · · · · · · · · · · · · · · · · · ·	Somestan Creditar	15	

Semester Credits: 15

3

3

3

3

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16

### Lower Division - Sophomore Year

ENGL 452	Technical Writing	3	
GBEC 121	Macroeconomics	3	
HIST 101	American Civilization I	3	
HUMN 201	World Literature & Culture I	3	
	Free Elective	3	
	Semester Credits:	15	

Semester Credits: 15

### **Upper Division - Junior Year**

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

- Ju	mor rear			
	GBTT 252	Business of Shipping	3	
	HIST 416	US Maritime History to Civil War	2	
	or HIST 417	US Maritime History Since 1865	5	
		Humanities Elective	3	
		LAS Elective	3	
		Free Elective	3	
		Somaaton Cradita	15	

Semester Credits: 15

Semester Credits:

ctive	3	
	3	
Semester Credits:	15	

- Senior Yo	ear			
I	HUMN 490	Studies in Maritime Policy	3	
I	HUMN 515	Internship in Maritime Studies II	3	
	or	Free Elective	5	
		Humanities Elective	3	
		LAS Elective	3	
		Law Elective	3	
		~ ~ 11		

Semester Credits: 15

Lower Division Credits:	
Upper Division Credits:	63

Total Credits: 122

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

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

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

### A.A.S. in Maritime Technology with Assistant Engineer Limited License

### Fall Semester

### **Spring Semester**

					waa Va			
			F	reshr	man re	ar		
	ENGL 101	Freshman English I	3			ENGL 102	Freshman English II	3
	GBUS 100	Intro to Business & Economics	3			ENGR 100	Engineering Graphics	1
	HIST 101	American Civilization I	3		L	<b>ENGR 540</b> <sup>+</sup>	Introduction to Ship Systems	3
	or HIST 102	American Civilization II	3			MATH 251	Statistics	3
	LEAD 101	Leadership/Maritime Experience	1		L	MT 250	Ship Construction & Stability	2
	MATH 090	Intro to College Mathematics	4			<b>CHEM 100</b>	Introductory Chemistry	3
L	PS 103	Water Safety & Survival	1				General Physics I	3
L	PS 112+	STCW Basic Training	2					
		G	17				Semester Credits:	15
		Semester Credits:	1/				Semester Creans.	15
		Semester Credits:	1/				Semester Credits:	15
L	ENGR 510	Summer Sea Term I	6		L	MTOE 521	Cadet Com Vessel Asst Engr I	2
L	ENGR 510				L	MTOE 521		
L	ENGR 510		6	  ophor	L more Y			
		Summer Sea Term I	6	 ophor	L more Y	ear		
	ENGR 503 <sup>+</sup>		6	ophor	L more Y L L	ear ENGR 504 <sup>+</sup>	Cadet Com Vessel Asst Engr I	
L L	ENGR 503+ ENGR 542	Summer Sea Term I Manufacturing Processes I	6 50 1	ophor	L more Y L L L	ear ENGR 504+ ENGR 541	Cadet Com Vessel Asst Engr I Manufacturing Processes II	2
L L L	ENGR 503+ ENGR 542 MTO 410	Summer Sea Term I Manufacturing Processes I Ship Systems II	6 50 1 2	ophor	L more Y L L L L	ear ENGR 504 <sup>+</sup> ENGR 541 MT 322 <sup>+</sup>	Cadet Com Vessel Asst Engr I Manufacturing Processes II Ship Systems I	2 1 2
L L L L	ENGR 503 <sup>+</sup> ENGR 542 MTO 410 MTOE 561 <sup>+</sup>	Summer Sea Term I Manufacturing Processes I Ship Systems II The Business of Towing	6 50 1 2 3	ophor	L L L	ear ENGR 504 <sup>+</sup> ENGR 541 MT 322 <sup>+</sup> MTOE 201 <sup>+</sup>	Cadet Com Vessel Asst Engr I Manufacturing Processes II Ship Systems I Marine Cargo Operations	2 1 2 3
	ENGR 503 <sup>+</sup> ENGR 542 MTO 410 MTOE 561 <sup>+</sup> MTOE 563 <sup>+</sup>	Summer Sea Term I Manufacturing Processes I Ship Systems II The Business of Towing Marine Engines & Aux Machinery I	6 50 1 2 3 4	ophor	L L L	ear ENGR 504 <sup>+</sup> ENGR 541 MT 322 <sup>+</sup> MTOE 201 <sup>+</sup> MTOE 562 <sup>+</sup>	Cadet Com Vessel Asst Engr I Manufacturing Processes II Ship Systems I Marine Cargo Operations Engine Room Resource Mgmt	2 1 2 3 3

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L MTOE 522 Cadet Com Vessel Asst Engr II

License Credits (L in left column): 48

MTOE 523 Cadet Com Vessel Asst Engr III

Total Credits: 75

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

### **Fall Semester**

			F	resh	mai	ı Ye	ar
	ENGL 101	Freshman English I	3				
	LEAD 101	Leadership/Maritime Experience	1				
	MATH 090	Intro to College Mathematics	4				
	MTO 120 <sup>+</sup>	Primer of Towing	3				
L	NAUT 102	Intro to Vessel Ops & Seamanship	1			L	
L	PS 103	Water Safety & Survival	1			L	
L	PS 112 <sup>+</sup>	STCW Basic Training	2				
		Semester Credits:	15				

	ENGL 102	Freshman English II	3	
	GBUS 100	Intro to Business & Economics	3	
	HIST 101	American Civilization I	3	
	or HIST 102	American Civilization II	5	
L	MT 250	Ship Construction & Stability	2	
L	NAVG 112	Navigation I: Intro to Navigation	4	
		Semester Credits:	15	

**Spring Semester** 

L	MT 510	Summer Sea Term I	6	
L	*MTOD 524	Cadet Com Vssl Ship Lim Ton I	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.

			Se	opho	more	e Ye	ear
L	METE 201+	Meteorology for Mariners	3			L	
L	MT 321	Intro to Cargo Ops & Stability	3			L	
	MTO 410	The Business of Towing	3				
L	NAUT 308	Nautical Operations: Safety	2			L	
L	NAUT 314	Rules of the Road	2			L	
L	NAUT 315	Intro to Integrated Bridge Systems	3			L	
						L	
		Semester Credits:	16				

L	MTOD 525	Cadet Com Vssl Ship Lim Ton II	4	
L	MTOD 526	Cadet Com Vssl Ship Lim Ton III	4	

L	MT 322+	Marine Cargo Operations	3	
L	MT 426 <sup>+</sup>	Maritime Communications	3	
	MTO 411	Towing Operations	3	
L	MTOD 414 <sup>+</sup>	Bridge Resource and Team Mgmt	3	
L	NAVG 312	Intgrtd Bridge Sys & Voyage Plannin	4	
L	PS 412	Medical First Aid	1	
		LAS Elective or	3 or	
L	NAVG 212	Navigation II: Oceans*	4	
		Semester Credits:	20  or	21

Semester Credits: 20 or 21

\* Required for Oceans Endorsement

License Credits (L in left column): 53 License Credits with Oceans Endorseme

Endorsement:	57
Total Credits:	82

83

Total Credits with Oceans Endorsement: