

**Appendix VII.**

**Eight Semester Displays for All MEAS Degree Programs**

**BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (ESA)  
AIR QUALITY CONCENTRATION**

17ESA036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	ES 100 Intro to Environmental Sci .....	3
MA 141 Calculus I <sup>2</sup> .....	4	MA 241 Calculus II <sup>2</sup> .....	4
MEA 213 Fundamentals of Meteorology I..	2	MEA 214 Fundamentals of Meteorology	
Natural Science Elective <sup>3</sup> .....	4	II.....	2
PE 1** Physical Education Elective <sup>4</sup> .....	1	PY 205 Physics Engr & Sci I <sup>2</sup> .....	4
PMS 100 Perspectives on Learning .....	1	Visual /Performing Arts or History <sup>5</sup> .....	3
	<u>16</u>		<u>16</u>

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
BIO 181 Introductory Biology.....	4	Biological Sciences Elective <sup>6</sup> .....	4
MA 242 Calculus III.....	4	Computer Science Elective <sup>7</sup> .....	3
MEA 311 Global Atmosphere .....	3	MA 341 Appl Differential Equations I.....	3
MEA 313 Weather Measure & Anly I.....	1	MEA 312 Atmospheric	
PY 208 Physics Engr & Sci II .....	4	Thermodynamics.....	3
	<u>16</u>	MEA 314 Weather Measure & Anly II.....	1
		Physical Education Elective.....	1
			<u>15</u>

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>2</sup> .....	3	CH 201 Chem Quant Sci <sup>2</sup> .....	3
CH 102 General Chem Lab <sup>2</sup> .....	1	CH 202 General Quant Lab <sup>2</sup> .....	1
Communication/Speech Elective <sup>8</sup> .....	3	ENG 333 Comm for Sci and Res.....	3
Literature <sup>5</sup> .....	3	History, Philosophy or Religion Elective	
MEA 421 Atmospheric Dynamics I <sup>2</sup> .....	3	<sup>5</sup> .....	3
ST 301 Statistical Methods I.....	3	MEA 422 Atmospheric Dynamics II .....	3
	<u>16</u>	Statistics Elective <sup>9</sup> .....	3
			<u>16</u>

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Chemistry Elective <sup>10</sup> .....	4	EC (ARE) 336 Intro Res & Env Econ .....	3
Economics Elective <sup>11</sup> .....	3	ES 400 Environmental Sci Project <sup>12</sup> .....	3
MEA 455 Micrometeorology.....	3	Humanities/Social Science Elective <sup>5</sup> .....	3
Natural Science Elective <sup>3</sup> .....	4	MEA 320 Fund of Air Pollution .....	4
	<u>14</u>	Political Science Elective <sup>13</sup> .....	3

16

Minimum total hours required for graduation.....125<sup>14</sup>

<sup>1</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>2</sup> Grade of C- or higher required in: CH 101, 102, 201, 202; ENG 101; MA 141, 241; MEA 421; PY 205.

<sup>3</sup> Choose course with a corequisite laboratory from the following: MEA 101, 110; MEA 200, 210; BO 360, 365; SSC 200.

<sup>4</sup> Any Physical Education course at the 100 level.

<sup>5</sup> These courses must be selected from the approved GER Listings for Humanities and Social Sciences and must include: 3 hours in literature; 3 hours in history, philosophy, or religion; 3 hours in the visual and performing arts or history; one additional course (3 hours). At least one course selection must focus on a non-English speaking culture.

<sup>6</sup> Either BO 200 or ZO 150.

<sup>7</sup> Course to be selected from CSC 112 Introduction to Computing-FORTRAN, CSC 114 Introduction to Computing-C++, CSC 116 Introduction to Computing-Java.

<sup>8</sup> Either COM 110 or COM 112.

<sup>9</sup> Either ST 302 or ST 371.

<sup>10</sup> Choose CH 315 (all semesters), CH 211 and CH 212 (spring) or CHE 205 (fall).

<sup>11</sup> EC (ARE) 201 or EC 205.

<sup>12</sup> Course in development. See advisor for replacement.

<sup>13</sup> Either PS 320 or 336.

<sup>14</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (ESG)  
ENVIRONMENTAL GEOLOGY CONCENTRATION**

17ESG036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	BIO 181 Introductory Biology.....	4
CH 102 General Chem Lab.....	1	CH 201 Chem Quant Sci.....	3
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	CH 202 General Quant Lab.....	1
MA 141 Calculus I <sup>1</sup> .....	4	ES 100 Intro to Environmental Sci.....	3
MEA 101 Geology I: Physical.....	3	MA 241 Calculus II <sup>1</sup> .....	4
MEA 110 Geology I Lab.....	1	PE 1** Physical Education Elective <sup>3</sup> .....	<u>1</u>
PMS 100 Perspectives on Learning.....	<u>1</u>		16
	17		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Literature Elective <sup>4</sup> .....	3	Communication/Speech Elective <sup>5</sup> .....	3
MA 242 Calculus III.....	4	MEA 410 Intro to Geol Materials.....	4
MEA 200 Intro to Oceanography.....	3	PY 208 Physics Engr & Sci II.....	4
MEA 210 Oceanography Lab.....	1	ZO 150 or BO 200 Option.....	<u>4</u>
Physical Education Elective.....	1		15
PY 205 Physics Engr & Sci I <sup>1</sup> .....	<u>4</u>		
	16		

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Economics Elective <sup>6</sup> .....	3	EC (ARE) 336 Intro Res & Env Econ <sup>10</sup> .....	3
Environmental Policy Option <sup>7</sup> .....	3	ENG 333 Comm for Sci and Res.....	3
First Geologic Option <sup>8</sup> .....	3	Math/Statistics Option <sup>11</sup> .....	3
SSC 200 Soil Science.....	4	MEA 323 Earth System Chemistry.....	3
Statistical Science Option <sup>9</sup> .....	<u>3</u>	MEA 451 Structural Geology.....	<u>4</u>
	16		16

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MEA 481 Prin of Geomorphology.....	3	ES 400 Environmental Sci Project <sup>15</sup> .....	3
Natural Science Option <sup>12</sup> .....	3	History/Philosophy/Religion Elective.....	3
Second Geology Option <sup>13</sup> .....	3	Humanities/Soc Sci Elective <sup>4</sup> .....	3
Supporting Technical Elective <sup>14</sup> .....	3	MEA Restricted Elective <sup>16</sup> .....	<u>3</u>
Visual/Performing Arts or History Elective.....			12
.....	<u>3</u>		
	15		

Minimum total hours required for graduation.....123<sup>17</sup>

<sup>1</sup> A grade of C- or better required in these courses: MA 141, 142; CH 101; ENG 101; PY 205.

<sup>2</sup> Substitute BIO 181 in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Any Physical Education course at the 100 level.

<sup>4</sup> These courses must be selected from the approved GER Listings for Humanities and Social Sciences and must include: 3 hours in literature; 3 hours in history, philosophy, or religion; 3 hours in the visual and performing arts or history; one additional course (3 hours). At least one course selection must focus on a non-English speaking culture.

<sup>5</sup> Communications/Speech elective to be chosen from COM 110, COM 112, COM 146 or COM 211.

<sup>6</sup> Economics Elective to be chosen from ARE 212, EC 201, or EC205.

<sup>7</sup> Environmental Policy Option to be chosen from PS 320 or PS 336.

<sup>8</sup> First Geologic Option to be chosen from MEA 250/MEA 251 or any geology course at the 300 level or higher.

<sup>9</sup> Statistical Science option to be chosen from any 300-level Statistics course.

<sup>10</sup> Also satisfies the Science, Technology & Society requirement.

<sup>11</sup> Math/Statistics Option to be selected from ST 302, MA 305, MA 341, MA 405, or CH 220 if a geochemical focus is desired.

<sup>12</sup> Natural Science Elective to be chosen from MEA 130, FOR 252, or PY 124/125.

<sup>13</sup> Second Geology Option is any additional 400 or 500 level geology course.

<sup>14</sup> Supporting Technical Elective recommended from the following: (Advanced Soils) SSC 452; (Advanced Chemistry) CH 220, CH 331; (Data Management) ST 430, ST 445; (Land Surface Characterization) GC 120, GC 320, FOR 353, PRT 462; (Other) MEA 311, FOR 420, FOR 460, LAR 430.

<sup>15</sup> Course in development. See advisor for substitution.

<sup>16</sup> MEA Restricted Elective is any MEA course at the 300 level or higher.

<sup>17</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF ARTS IN GEOLOGY (GYA)**

17GYA058

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	CH 101 Chem Molecular Sci <sup>1</sup> .....	3
MA 131 Calc Life Manag A <sup>1</sup> .....	3	CH 102 General Chem Lab.....	1
MEA 101 Geology I: Physical.....	3	Math/Statistics Option <sup>4</sup> .....	3
MEA 110 Geology I Lab.....	1	MEA 202 Geology II: Historical.....	3
PMS 100 Orientation to PAMS.....	1	MEA 211 Geology II Lab.....	1
Visual/Performing Arts or History Elective <sup>3</sup> <u>3</u>		PE 1** Physical Education Elective <sup>5</sup> .....	1
	15	Social Science Elective <sup>3</sup> .....	<u>3</u>
			15

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Computer Sci Option <sup>6</sup> .....	3	CH 201 Chem Quant Sci.....	3
Free Elective.....	3	CH 202 Quant Chem Lab.....	1
MEA 410 Intro Mineralogy & Petrology.....	4	COM 110 Public Speaking.....	3
Social Science Elective <sup>3</sup> .....	<u>3</u>	Literature Elective <sup>3</sup> .....	3
	13	MEA 450 Sed Petrol & Strat.....	4
		Physical Education Elective.....	<u>1</u>
			15

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Free Elective.....	3	Earth Science Elective <sup>7</sup> .....	3
History or Phil/Religion Elective <sup>3</sup> .....	3	Earth Science Elective <sup>7</sup> .....	4
MEA 451 Structural Geology.....	4	Humanities/Soc Sci Elective <sup>3</sup> .....	3
PY 211 College Physics I.....	<u>4</u>	Science Option <sup>9</sup> .....	4
	14	Technical Writing <sup>10</sup> .....	<u>3</u>
			17

**SUMMER SESSION**

MEA 465 Geologic Field Camp.....4

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Advised Elective <sup>11</sup> .....	3	Advised Elective <sup>11</sup> .....	3
Surficial Processes Elective <sup>8</sup> .....	3	Earth Science Elective <sup>7</sup> .....	3
Free Elective.....	3	Free Elective.....	3
Humanities/Soc Sci Elective <sup>3</sup> .....	3	Humanities/Soc Sci Elective <sup>3</sup> .....	3
MEA 491 Senior Seminar.....	<u>2</u>	Sci, Tech & Society Elective <sup>12</sup> .....	<u>3</u>
	14		15
		Minimum total hours required for graduation.....	122 <sup>13</sup>

<sup>1</sup> Grade of C- or higher required in CH 101; ENG 101; MA 131, PY 211.<sup>2</sup> Substitute CH 101 and 102 in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion; 3 hours in the visual and performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; three additional courses (9 hours) from the humanities/social sciences disciplines; one course from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective. At least one course selection must focus on a non-English speaking culture.

<sup>4</sup> One of the following: MA 114, MA 231, MA 241, or ST 311.

<sup>5</sup> Any Physical Education course at the 100 level.

<sup>6</sup> CSC 200 recommended but CSC 112, CSC 114, or CSC 116 may be substituted.

<sup>7</sup> MEA 250/251 or any MEA course at the 300 level or higher. Select electives in consultation with your advisor.

<sup>8</sup> Select one course in surficial processes from among MEA 250, MEA 411, MEA 481, and MEA 485

<sup>9</sup> One of the following: BIO 181, BO 200, PY 212, or SSC 200.

<sup>10</sup> One of the following: ENG 331, ENG 332, or ENG 333.

<sup>11</sup> Advised electives may be in geology or in a supporting field. Select in consultation with your advisor.

<sup>12</sup> Any course from the Science, Technology and Society from the Humanities and Social Sciences Perspectives GER listing.

<sup>13</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN GEOLOGY (GYS)**

17GYS058

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci.....	3	CH 201 Chem Quant Sci.....	3
CH 102 General Chem Lab.....	1	CH 202 General Quant Lab .....	1
MA 141 Calculus I.....	4	ENG 101 Comp & Rhetoric.....	4
MEA 101 Geology I: Physical.....	3	MA 241 Calculus II .....	4
MEA 110 Geology I Lab .....	1	MEA 202 Geology II: Historical .....	3
PE 1** Physical Education Elective <sup>1</sup> .....	1	MEA 211 Geology II Lab.....	<u>1</u>
PMS 100 Orientation to PAMS .....	<u>1</u>		16
	14		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester Credits</i>	
MA 242 Calculus III.....	4	MEA 450 Sed Petrol & Strat .....	4
MEA 410 Intro to Mineralogy and Petrology		Geology Elective <sup>5</sup> .....	3
.....	4	PY 205 Physics Engr & Sci I.....	4
Computer Sci Option <sup>2</sup> .....	3	Physical Education Elective.....	1
Literature Elective <sup>3</sup> .....	<u>3</u>	Social Science Elective <sup>3</sup> .....	<u>3</u>
	14		15

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MEA 451 Structural Geology.....	4	COM 110 Public Speaking .....	3
PY 208 Physics Engr & Sci II .....	4	ENG 333 Technical Writing <sup>7</sup> .....	3
Surface Processes Option <sup>6</sup> .....	3	Math/Science Option <sup>8</sup> .....	3
Statistical Science Option <sup>4</sup> .....	3	Advised Elective <sup>9</sup> .....	3
Visual or Performing Arts / History		Science, Technology, and Society Elective <sup>3</sup>	<u>3</u>
Elective <sup>3</sup> .....	<u>3</u>		15
	17		

**SUMMER SESSION**

MEA 465 Summer Field Course .....4

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Advised Elective <sup>9</sup> .....	3	Geology Elective <sup>5</sup> .....	3
Advised Elective <sup>9</sup> .....	3	Advised Elective <sup>9</sup> .....	3
Humanities/Soc Sci Elective <sup>3</sup> .....	3	Humanities/Soc Sci Elective <sup>3</sup> .....	3
History/Philosophy/Religion Elective <sup>3</sup> .....	3	Free Elective .....	3
MEA 491 Senior Seminar .....	<u>2</u>	Free Elective .....	<u>3</u>
	14		15

Minimum total hours required for graduation.....124<sup>10</sup><sup>1</sup> Any Physical Education course at the 100 level.<sup>2</sup> One of the following: CSC 112, CSC 114, CSC 116 or CSC 200, or MA 116.<sup>3</sup> These courses (21 hrs) must be selected from the approved GER Listings for Social Sciences and Humanities as follows: one course in literature; one course in history, philosophy, or religion; one course in visual or performing arts, or history; two courses from different content areas in psychology, economics, politics, sociology, anthropology or cultural geography; and two courses in any humanities/social sciences discipline. At least one course selection must focus on a non-English speaking culture. One of these must include a course from the Science,

Technology and Society Listing (Humanities & Social Science Perspective).

<sup>4</sup> One of the following: ST 301, ST 361, or ST 371.

<sup>5</sup> MEA 250/251 or any MEA earth science course at the 300 level or higher. Select in consultation with your advisor.

<sup>6</sup> One course from among MEA 250, MEA 411, MEA 481, and MEA 485.

<sup>7</sup> ENG 331 or ENG 332 may be substituted for ENG 333.

<sup>8</sup> Math/Science Option to be selected from CE 213; CH 220, 221, 315, 331, 431; CSC 302; MA 305 or MA 405, MA 341, 421; MAE 301; PY 407; ST 302.

<sup>9</sup> Advised electives are in geology and related fields, and are to be selected to fulfill the requirements of the student's Degree Option. The Degree Option is planned, with the advice and consent of the advisor, to meet the student's career objective.

<sup>10</sup> Graduation also requires foreign language proficiency at the FL\_102 level. A grade of C- or higher is required in ENG 101, CH 101, MA 141, 241; PY 205. Not more than one D will be accepted in other math and science courses. In addition, not more than one D will be accepted in other required courses in the discipline (including advised and restricted electives).

Examples of possible Degree Options within GYS (6 credit hours listed as "Geology Electives," 12 credit hours listed as "Advised Electives" plus 6 credit hours listed as "Free Electives" in the eight-semester display):

**Professional Option (\* required courses)**

MEA 300 Environmental Geology

\*MEA 440 Mineralogy/Petrology

MEA 415 Economic Geology

MEA 435 Engineering Geology

MEA 470 Geophysics

\*MEA 485 Intro Hydrogeology

\*SSC 200 Soil Science

\*Intro to GIS

**Marine Geology Option (18 credit hours)**

MEA 200/210 Intro Oceanography and Lab

MEA 250/251 Intro Coastal Environments and Lab

MEA 411 Marine Sediment Transport

MEA 460 Intro Physical Oceanography

MEA 323 Earth System Chemistry

MEA 461 Student Cruise

**Paleontology/Paleoecology Option (20 credit hours)**

BIO 181 Intro Biology

MEA 268 Marine Paleontology

MEA 369 Terrestrial Paleontology

Ecology option course (BO 360/365 or GN 411)

ZO 450 Evolutionary Biology

MEA 384 Paleoecology

Paleoclimates or ES 400

**Environmental Geology Option (18 credit hours to be selected from)**

BIO 181 Intro Biology  
ZO/BO option  
MEA 200/210 Oceanography  
MEA 300 Environmental Geology  
MEA 323 Earth System Chemistry  
MEA 481 Geomorphology  
MEA 485 Intro Hydrogeology  
SSC 200 Soil Science  
Environmental Policy  
Environmental Economics

**Hard Rock/Tectonics Option (18 credit hours to be selected from)**

MEA 323 Earth System Chemistry  
MEA 440 Mineralogy/Petrology  
MEA 470 Geophysics  
MEA 415 Economic Geology  
MEA 574 Advanced Igneous Petrology  
MEA 575 Advanced Metamorphic Petrology  
MEA 577 Electron Probe Analysis  
MEA 599 Regional Geology

**BACHELOR OF SCIENCE IN METEOROLOGY (MMY)  
MARINE SCIENCE CONCENTRATION**

17MMY036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	CH 201 Chem Quant Sci.....	3
CH 102 General Chem Lab.....	1	MA 241 Calculus II <sup>1</sup> .....	4
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	MEA 214 Fund of Meteorology II.....	2
MA 141 Calculus I <sup>1</sup> .....	4	PY 205 Physics Engr & Sci I <sup>1</sup> .....	4
MEA 213 Fund of Meteorology I.....	2	Visual/Peforming Arts or History Elective <sup>3</sup>	<u>3</u>
PMS 100 Orientation to PAMS.....	<u>1</u>		16
	15		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MA 242 Calculus III.....	4	Geophysical Science Elective <sup>4</sup> .....	3
MEA 200 Intro to Oceanography.....	3	Literature Elective <sup>3</sup> .....	3
MEA 210 Oceanography Lab.....	1	MA 341 Appl Differential Equations I.....	3
MEA 311 The Global Atmosphere.....	3	MEA 312 Atmospheric Thermodynamics...3	
MEA 313 Weather Measure & Anly I.....	1	MEA 314 Weather Measure & Anly II.....	1
PY 208 Physics Engr & Sci II.....	<u>4</u>	Social Science Elective <sup>3</sup> .....	<u>3</u>
	16		16

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Computer Programming Option <sup>5</sup> .....	3	Advised Elective <sup>7</sup> .....	3
Humanities/Soc Sci Elective <sup>3</sup> .....	3	ENG 333 Comm for Sci & Res.....	3
MEA 421 Atmospheric Dynamics I <sup>1</sup> .....	3	MEA 412 Atmospheric Physics.....	3
MEA 460 Physical Oceanogr.....	3	MEA 422 Atmospheric Dynamics II <sup>1</sup> .....	3
PE 1** Physical Education Elective <sup>6</sup> .....	1	MEA 462 Obser Methods & Data Anly.....	3
ST 380 Prob & Stat for Phys Sciences.....	<u>3</u>	Physical Education Elective.....	<u>1</u>
	16		16

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Approved Elective <sup>8</sup> .....	3	Advised Elective <sup>7</sup> .....	3
History/Philosophy/Religion Elective <sup>3</sup> .....	3	Free Elective.....	3
MEA 443 Synoptic Weather Anly & Forecast.....	4	Humanities/Soc Sci Elective <sup>3</sup> .....	3
MEA 455 Micrometeorology.....	<u>3</u>	MEA 467 Marine Meteorology.....	3
	13	Science, Tech & Society Elective <sup>3,9</sup> .....	<u>3</u>
			15

Minimum total hours required for graduation.....123 <sup>10</sup>

<sup>1</sup> Grade of C- or higher required in CH 101; ENG 101, MA 141, 241; MEA 421, 422; PY 205.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>4</sup> Geophysical Science Elective is selected from among MEA 101, PY 123, PY 124, SSC 200 or CE 200.

<sup>5</sup> CSC 114 Introduction to Computing C++ recommended but may substitute CSC 112 FORTRAN or CSC 116 Java.

<sup>6</sup> Any Physical Education course at the 100 level.

<sup>7</sup> Advised Electives are any meteorology course at the 400 or 500 level.

<sup>8</sup> Approved Elective should be selected in consultation with advisor.

<sup>9</sup> This course should be taken from among those offered on the GER list from a Humanities or Social Science perspective.

<sup>10</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN MARINE SCIENCES (MRB)  
 BIOLOGICAL OCEANOGRAPHY CONCENTRATION**

17MRB048

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
BIO 181 Intro Biology I <sup>1</sup> .....	4	BIO 183 Intro Biology II <sup>1</sup> .....	4
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	CH 201 Chem Quant Sci <sup>1</sup> .....	3
CH 102 Gen Chem Lab .....	1	CH 202 Chemistry Quant Lab .....	1
ENG 101 Acad Writing Rsch <sup>1,2</sup> .....	4	MA 241 Calculus II <sup>1</sup> .....	4
MA 141 Calculus I <sup>1</sup> .....	4	MEA 100 Earth System Science <sup>3</sup> .....	4
PMS 100 Orientation to PAMS .....	<u>1</u>	PE** Physical Education Elective <sup>4</sup> .....	<u>1</u>
	17		17

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Organic Chemistry Elective <sup>5</sup> .....	4	Botany Elective <sup>6</sup> .....	4
MA 242 Calculus III .....	4	MEA 460 Physical Oceanogr .....	3
MEA 200 Intro to Oceanography .....	3	PY 208 Physics Engr & Sci II .....	4
MEA 210 Oceanography Lab .....	1	ZO 150 Animal Diversity .....	<u>4</u>
PY 205 Physics Engr & Sci I <sup>1</sup> .....	<u>4</u>		15
	16		

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Concentration Elective <sup>7</sup> .....	4	Concentration Elective <sup>7</sup> .....	4
MEA/ZO 449 Biological Oceanography ....	3	Computer Sci Option <sup>10</sup> .....	3
Physical Education Elective.....	1	Literature Elective <sup>9</sup> .....	3
Social Science Elective <sup>9</sup> .....	3	MEA Restricted Elective <sup>12</sup> .....	3
Visual/Performing Arts or History Elective <sup>9</sup>		Statistical Science Option <sup>11</sup> .....	<u>3</u>
.....	<u>3</u>		16
	14		

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Ecology Elective <sup>9</sup> .....	3 or 4	Concentration Elective <sup>7</sup> .....	3 or 4
ENG 333 Comm for Sci & Res.....	3	History/Phil/Religion Elective <sup>9</sup> .....	3
Concentration Elective <sup>7</sup> .....	4	MEA 461 Student Cruise.....	1
Humanities/Soc Sci Elective <sup>9</sup> .....	3	MEA 462 Obser Methods & Data Anyl .....	3
MEA 495 Senior Seminar.....	<u>1</u>	Science, Tech & Soc Elective <sup>9</sup> .....	3
	14 or 15	Social Science Elective <sup>9</sup> .....	<u>3</u>
			16 or 17

Minimum total hours required for graduation.....125<sup>13</sup>

<sup>1</sup> Grade of C- or higher required in BIO 181, 183, CH 101, 201, 221, 223, ENG 101; MA 141, 241; PY 205.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Majors should register for the honors lab section.

<sup>4</sup> Any Physical Education course at the 100 level.

<sup>5</sup> CH 220, or CH 221 for those students who plan to take additional chemistry and biochemistry.

<sup>6</sup> BO 200 or BO 250.

<sup>7</sup> Concentration electives to be selected as a group in consultation with advisor, based on career goals.

<sup>8</sup> BO 360/365 or ZO 260 or MEA 454.

<sup>9</sup> These courses must be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours

in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology or cultural geography; two courses (6 hours) from the humanities/social science disciplines. At least one course selection must focus on a non-English

speaking culture. At least once course selection must be from the GER list of Science, Technology and Society offerings

(Humanities & Social Science Perspective).

<sup>10</sup> CSC 112 Introduction to Computing-FORTRAN or CSC 114 Introduction to Computing-C++.

<sup>11</sup> Any Statistics course at the 300 level.

<sup>12</sup> MEA Restricted Elective to be selected from MEA 473, MEA 467, or a course in marine geology (MEA 250, MEA 411, MEA 570).

<sup>13</sup> Graduation also requires foreign language proficiency at the FL\_ 102 level.

**BACHELOR OF SCIENCE IN MARINE SCIENCE (MRC)  
CHEMISTRY CONCENTRATION**

17MRC056

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	CH 201 Chem Quant Sci <sup>1</sup> .....	3
CH 102 General Chem Lab.....	1	CH 202 General Quant Lab .....	1
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	MA 241 Calculus II <sup>1</sup> .....	4
MA 141 Calculus I <sup>1</sup> .....	4	MEA 100 Earth System Science <sup>4</sup> .....	4
PE 1** Physical Education Elective <sup>3</sup> .....	1	Visual/Performing Arts or History Elective <sup>5,3</sup>	
PMS 100 Orientation to PAMS .....	<u>1</u>		
	14		15

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 221 Organic Chemistry I <sup>1</sup> .....	4	CH 211 Analytical Chemistry I .....	3
MA 242 Calculus III <sup>1</sup> .....	4	CH 212 Analytical Chemistry I Lab .....	1
MEA 200 Intro to Oceanography .....	3	CH 223 Organic Chemsitry II <sup>1</sup> .....	4
MEA 210 Oceanography Lab .....	1	MEA 323 Earth System Chemistry.....	3
PY 205 Physics Engr & Sci I <sup>1</sup> .....	4	PY 208 Physics Engr & Sci II <sup>1</sup> .....	4
	16		15

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 401 Syst Inorganic Chem I.....	3	CH 403 Syst Inorganic Chem II.....	3
CH 402 Inorganic Chem Lab.....	1	Computer Sci Option <sup>6</sup> .....	3
CH 428 Qualitative Organic Analysis .....	3	Literature Elective <sup>5</sup> .....	3
MA 341 Differential Equations I.....	3	MEA Restricted Elective <sup>7</sup> .....	3
MEA 460 Physical Oceanogr.....	3	Physical Education Elective.....	1
MEA 473 Chemical Oceanography .....	<u>3</u>	Statistical Science Option <sup>8</sup> .....	<u>3</u>
	16		16

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 431 Physical Chemistry I <sup>1</sup> .....	3	CH 433 Physical Chemistry II <sup>1</sup> .....	3
ENG 333 Comm for Sci & Res.....	3	History/Philosophy/Religion Elective <sup>5</sup> .....	3
Humanities/Soc Sci Elective <sup>5</sup> .....	3	Humanities/Soc Sci Elective <sup>5</sup> .....	3
MEA 495 Senior Seminar.....	1	MEA 461 Student Cruise .....	1
MEA Restricted Elective <sup>7</sup> .....	3	MEA 462 Obser Methods & Data Anly .....	3
Social Science Elective <sup>5</sup> .....	<u>3</u>	Science, Tech & Soc Elective <sup>5</sup> .....	<u>3</u>
	16		16

Minimum total hours required for graduation.....124 <sup>9</sup>

<sup>1</sup> Grade of C- or higher required in CH 101, 201, 221, 223, 431, 433; ENG 101; MA 141, 241, 242; PY 205, 208.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Any Physical Education course at the 100 level.

<sup>4</sup> Majors should register for the honors lab section.

<sup>5</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>6</sup> CSC 112 Introduction to Programming –FORTRAN or CSC 114 Introduction to Programming –C++.

<sup>7</sup> MEA Restricted Elective to be selected from MEA 449, MEA 467 or MEA 474.

<sup>8</sup> Any Statistics course at the 300 level.

<sup>9</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN MARINE SCIENCE (MRG)  
GEOLOGY CONCENTRATION**

17MRG036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	CH 201 Chem Quant Sci <sup>1</sup> .....	3
CH 102 General Chem Lab.....	1	CH 202 General Quant Lab .....	1
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	MA 241 Calculus II <sup>1</sup> .....	4
MA 141 Calculus I <sup>1</sup> .....	4	MEA 100 Earth System Science <sup>3</sup> .....	4
MEA 101 Geology I: Physical.....	3	MEA 102 Geology II: Historical .....	3
MEA 110 Geology I Lab .....	1	MEA 111 Geology II Lab .....	<u>1</u>
PMS 100 Orientation to PAMS .....	<u>1</u>		16
	17		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MA 242 Calculus III.....	4	Computer Sci Option <sup>5</sup> .....	3
MEA 200 Intro to Oceanography .....	3	MEA 250 Intro Coastal Env .....	3
MEA 210 Oceanography Lab .....	1	MEA 251 Intro Coastal Env Lab .....	1
MEA 330 Mineralogy .....	5	MEA 440 Igneous & Meta Petrol .....	4
Visual/Performing Arts or History Elective <sup>4</sup> ..	<u>3</u>	PE 1** Physical Education Elective <sup>6</sup> .....	1
	16	PY 205 Physics Engr & Sci I <sup>1</sup> .....	<u>4</u>
			16

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MEA 450 Sed Petrol & Strat .....	4	ENG 333 Comm for Sci & Res.....	3
MEA 460 Physical Oceanogr.....	3	Geophysics Option <sup>7</sup> .....	3
Physical Education Elective.....	1	History/Philosophy/Religion Elective <sup>4</sup> .....	3
PY 208 Physics Engr & Sci II .....	4	MEA Restricted Elective <sup>8</sup> .....	3
Social Science Elective <sup>4</sup> .....	<u>3</u>	Statistical Science Option <sup>9</sup> .....	<u>3</u>
	15		15

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Humanities/Soc Sci Elective <sup>4</sup> .....	3	Humanities/Soc Sci Elective <sup>4</sup> .....	3
Literature Elective <sup>4</sup> .....	3	MEA 451 Structural Geology .....	4
MEA 411 Marine Sed Transport.....	3	MEA 461 Student Cruise .....	1
MEA 474 Geological Oceanography.....	3	MEA 462 Obser Methods & Data Only .....	3
MEA 495 Senior Seminar.....	1	Science, Tech & Soc Elective <sup>4</sup> .....	<u>3</u>
MEA Restricted Elective <sup>8</sup> .....	<u>3</u>		14
	16		

Minimum total hours required for graduation.....125<sup>10</sup>

<sup>1</sup> Grade of C- or higher is required in CH 101, 201; ENG 101, MA 141, 241; PY 205.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Majors should register for the honors lab section.

<sup>4</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>5</sup> CSC 112 Introduction to Programming –FORTRAN or CSC 114 Introduction to Programming –C++.

<sup>6</sup> Any Physical Education course at the 100 level.

<sup>7</sup> MEA 470 Introduction to Geophysics or MEA 471 Exploration and Engineering Geophysics.

<sup>8</sup> MEA Restricted Elective to be selected from MEA 220 (ZO 220), MEA 467 or MEA 473.

<sup>9</sup> One of the following: ST 301, ST 361, or ST 371.

<sup>10</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN MARINE SCIENCE (MRM)  
METEOROLOGY CONCENTRATION**

17MRM036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	MA 241 Calculus II <sup>1</sup> .....	4
CH 102 General Chem Lab.....	1	MEA 100 Earth System Science <sup>4</sup> .....	4
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	MEA 214 Fundamentals of Meteorology II.2	
MA 141 Calculus I <sup>1</sup> .....	4	Physical Education Elective.....	1
MEA 213 Fundamentals of Meteorology I..2		PY 205 Physics Engr & Sci I <sup>1</sup> .....	4
PE 1** Physical Education Elective <sup>3</sup> .....	1		15
PMS 100 Orientation to PAMS .....	1		
	16		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MA 242 Calculus III.....	4	CH 201 Chem Quant Sci <sup>1</sup> .....	3
MEA 200 Intro to Oceanography .....	3	CH 202 General Quant Lab .....	1
MEA 210 Oceanography Lab .....	1	Computer Sci Option <sup>5</sup> .....	3
MEA 311 The Global Atmosphere.....	3	MA 341 Appl Differential Equations I.....	3
MEA 313 Weather Measure & Anyl I.....	1	MEA 312 Atmospheric Thermodynamics...3	
PY 208 Physics Engr & Sci I.....	4	MEA 314 Weather Measure & Anly II.....	1
	16		14

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Literature Elective <sup>6</sup> .....	3	Approved Elective <sup>8</sup> .....	3
MEA 421 Atmospheric Dynamics I <sup>1</sup> .....	3	ENG 333 Comm for Sci & Res.....	3
MEA 460 Physical Oceanogr.....	3	MEA 467 Marine Meteorology .....	3
MEA Restricted Elective <sup>7</sup> .....	3	MEA Restricted Elective <sup>7</sup> .....	3
ST 380 Prob & Stat for Phys Sciences.....	3	Social Science Elective <sup>6</sup> .....	3
	15		15

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Approved Elective <sup>8</sup> .....	3	Approved Elective <sup>8</sup> .....	3
Humanities/Soc Sci Elective <sup>6</sup> .....	3	History/Philosophy/Religion Elective <sup>6</sup> .....	3
MEA 463 Fluid Physics.....	3	MEA 461 Student Cruise.....	1
MEA 495 Senior Seminar.....	1	MEA 462 Obser Methods & Data Anly .....	3
Science, Tech & Soc Elective <sup>6</sup> .....	3	MEA 464 Ocean Circulation Systems .....	3
Social Science Elective <sup>6</sup> .....	3	Visual/Performing Arts or History Elective <sup>6</sup> 3	
	16		16

Minimum total hours required for graduation.....123<sup>9</sup>

<sup>1</sup> Grade of C- or higher required in CH 101, 201; ENG 101; MA 141, 241; M EA 421; PY 205.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Any Physical Education course at the 100 level.

<sup>4</sup> Majors should register for the the honors lab section.

<sup>5</sup> CSC 112 or 114.

<sup>6</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>7</sup> MEA Restricted Elective to be selected from MEA 220 (ZO 220), MEA 473 or MEA 474. MEA 474 is in development. Appropriate substitution is enrollment in MEA 570.

<sup>8</sup> To be selected in consultation with advisor.

<sup>9</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN MARINE SCIENCE (MRP)  
PHYSICS CONCENTRATION**

17MRP036

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	CH 201 Chem Quant Sci <sup>1</sup> .....	3
CH 101 Chem Molecular Sci <sup>1</sup> .....	3	CH 202 General Quant Lab .....	1
CH 102 General Chem Lab.....	1	MA 241 Calculus II <sup>1</sup> .....	4
MA 141 Calculus I <sup>1</sup> .....	4	MEA 100 Earth System Science <sup>4</sup> .....	4
PMS 100 Orientation to PAMS .....	1	PY 202 General Physics II <sup>1,3</sup> .....	<u>4</u>
PY 201 General Physics I <sup>1,3</sup> .....	<u>4</u>		16
	17		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MA 242 Calculus III.....	4	Computer Sci Option <sup>7</sup> .....	3
MEA 200 Intro to Oceanography .....	3	Humanities/Soc Sci Elective <sup>6</sup> .....	3
MEA 210 Oceanography Lab.....	1	MA 341 Appl Differential Equations I.....	3
PE 1** Physical Education Elective <sup>5</sup> .....	1	MEA Restricted Elective <sup>8</sup> .....	3
PY 203 General Physics III <sup>1,3</sup> .....	4	ST 380 Prob & Stat for Phys Sciences.....	<u>3</u>
Social Science Elective <sup>6</sup> .....	<u>3</u>		15
	16		

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Literature Elective <sup>6</sup> .....	3	ENG 333 Comm for Sci & Res.....	3
MA 401 Appl Differential Equations II.....	3	MEA 467 Marine Meteorology .....	3
MEA 460 Physical Oceanogr.....	3	PY 412 Mechanics II .....	3
Physical Education Elective.....	1	PY 413 Thermal Physics.....	3
PY 411 Mechanics I.....	<u>3</u>	Visual/Performing Arts or History Elective <sup>6,3</sup>	<u>3</u>
	13		15

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
History/Philosophy/Religion Elective <sup>6</sup> .....	3	MEA 461 Student Cruise .....	1
Humanities/Soc Sci Elective <sup>6</sup> .....	3	MEA 462 Obser Methods & Data Anly .....	3
MEA 495 Senior Seminar.....	1	MEA 464 Ocean Circulation Systems .....	3
MEA Restricted Elective <sup>8</sup> .....	3	PY 415 Electricity & Magnetism II.....	3
PY 414 Electricity & Magnetism I.....	3	Science, Tech & Soc Elective <sup>6</sup> .....	3
PY 463 Fluid Physics.....	<u>3</u>	Technical Elective <sup>9</sup> .....	<u>3</u>
	16		16

Minimum total hours required for graduation.....124<sup>10</sup>

<sup>1</sup> Grade of C- or higher required in CH 101, 201; ENG 101; MA 141, 241; PY 201, 202, 203.

<sup>2</sup> Substitute Visual/Performing Arts or History in Fall if ENG 101 must be taken in Spring due to course availability.

<sup>3</sup> Students may substitute PY 205 for PY 201, PY 208 for PY 202, and PY 407 for PY 203. However, they must take the lab section of PY 203 if they elect to take PY 407.

<sup>4</sup> Majors should enroll in the honors lab section.

<sup>5</sup> Any Physical Education course at the 100 level.

<sup>6</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>7</sup> CSC 112 Introduction to Programming - FORTRAN or CSC 114 Introduction to Programming -C++.

<sup>8</sup> MEA Restricted Elective to be selected from MEA 220 (ZO 220), MEA 473 or MEA 474.

<sup>9</sup> Technical Electives are courses at the 300 level or above in physical, mathematical, or biological sciences and in engineering.

<sup>10</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>1</sup> .....3	CH 201 Chem Quant Sci <sup>4</sup> .....3	
CH 102 General Chem Lab.....1	CH 202 General Quant Lab .....1	
ENG 101 Academic Writing & Res. <sup>1,2</sup> .....4	MA 241 Calculus II <sup>1</sup> .....4	
MA 141 Calculus I <sup>1</sup> .....4	MEA 214 Fundamentals of Meteorology II.2	
MEA 213 Fundamentals of Meteorology I.2	PY 205 Physics Engr & Sci I <sup>1</sup> .....4	
PE 1** Physical Education Elective <sup>3</sup> .....1	Visual or Performing Arts or History	
PMS 100 Orientation to PAMS ..... <u>1</u>	Elective <sup>5</sup> ..... <u>3</u>	
16	17	

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Spring Semester</i>	<i>Credits</i>
MA 242 Calculus III.....4	Approved Elective <sup>6</sup> .....3	
MEA 311 The Global Atmosphere.....3	Geophysical Science Elective <sup>7</sup> .....3	
MEA 313 Weather Measure & Analysis I.... 1	Literature Elective <sup>5</sup> .....3	
PY 208 Physics Engr & Sci II.....4	MA 341 Appl Differential Equations I.....3	
Physical Education Elective..... 1	MEA 312 Atmospheric Thermodynamics ...3	
Social Sciences Elective <sup>5</sup> ..... <u>3</u>	MEA 314 Weather Measure & Analysis II.. <u>1</u>	
16	16	

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Spring Semester</i>	<i>Credits</i>
Approved Elective <sup>6</sup> .....3	Approved Elective <sup>6</sup> .....3	
Computer Programming Option <sup>8</sup> .....3	ENG 333 Comm for Sci & Res.....3	
MEA 421 Atmospheric Dynamics I <sup>1</sup> .....3	MEA 412 Atmospheric Physics.....3	
Humanities/Soc Sci Elective <sup>5</sup> .....3	MEA 422 Atmospheric Dynamics II <sup>1</sup> .....3	
ST 380 Prob & Stat for Phys Sciences..... <u>3</u>	Restricted Elective <sup>9</sup> ..... <u>3</u>	
15	15	

**SENIOR YEAR**

<i>Fall Semester</i>	<i>Spring Semester</i>	<i>Credits</i>
Advised Elective <sup>10</sup> .....3	Advised Electives <sup>10</sup> .....3	
Approved Elective <sup>6</sup> .....3	Approved Elective <sup>6</sup> .....3	
History/Phil/Religion Elective <sup>5</sup> .....3	Restricted Elective <sup>11</sup> .....3	
Humanities/Soc Sci Elective <sup>5</sup> .....3	Science, Tech & Society Elective <sup>5, 12</sup> ..... <u>3</u>	
MEA 443 Synoptic Weather Anal & Forecast..... <u>4</u>	12	
16		

Minimum total hours required for graduation.....123<sup>13</sup>

<sup>1</sup> Grade of C- or higher required in CH 101; ENG 101; MA 141, 241; MEA 421, 422; and PY 205.

<sup>2</sup> ENG 101 will not be available for all students in Fall of their freshman year. Students not enrolled in ENG 101 should register for this course the following Fall, and substitute a social sciences elective in their first semester.

<sup>3</sup> Any Physical Education course at the 100 level.

<sup>4</sup> Advanced transfer students are permitted to substitute mathematics, science, or engineering credits for CH 201, 202.

<sup>5</sup> These courses to be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history; two courses (6 hours) from different content areas in the study of psychology, economics, politics, sociology, anthropology, or cultural geography; two courses (6 hours) from the humanities/social sciences disciplines. At least one course selection must focus on a non-English speaking culture. At least one course must be taken from among those offered on the GER list for Science, Technology, and Society from a Humanities or Social Sciences perspective.

<sup>6</sup> Approved Electives constitute a minor field of emphasis consisting of at least 15 credit hours in a single discipline or related disciplines. These include, but are not limited to: biometeorology, chemistry, computer science, environmental quality, geology-geophysics, hydrology, mathematics, physics, physical oceanography, statistics, several areas of engineering, agriculture, forestry, science education, weather communication.

<sup>7</sup> Geophysical Science Elective is selected from among MEA 101, MEA 200, PY 123, PY 124, SSC 200.

<sup>8</sup> CSC 114 Introduction to Computing C++ recommended but may substitute CSC 112 FORTRAN or CSC 116 Java.

<sup>9</sup> Any meteorology course at the 300 level or above.

<sup>10</sup> Any meteorology course at the 400 level or above. Course choice affects career options. See advisor for appropriate course selection.

<sup>11</sup> Any MEA course at the 400 level or above.

<sup>12</sup> This course should be taken from among those offered on the GER list from a Humanities or Social Science perspective.

<sup>13</sup> Graduation also requires foreign language proficiency at the FL\_102 level.

**BACHELOR OF SCIENCE IN NATURAL RESOURCES (NRC) 17NRC036**  
**MARINE AND COASTAL CONCENTRATION**

**FRESHMAN YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
ENG 101 Academic Writing & Res <sup>1,2</sup> .....	4	BIO 181 Introductory Biology .....	4
MA 131 Calc. Life & Mgmt A <sup>2</sup> .....	3	COM 110 Public Speaking .....	3
(or MA 141 Calculus I <sup>2</sup> .....	4)	MA 132 Computational Math <i>and</i> .....	1
MEA 101 Geology I: Physical .....	3	MA 231 Calc. Life & Mgmt B .....	3
MEA 110 Geology Lab .....	1	(or MA 241 Calculus II .....	4)
NR 100 Intro. to Natural Resource .....	2	MEA 130 Intro. to Weather and Climate .....	3
PE 1*** Physical Education		MEA 135 Weather and Climate Lab .....	<u>1</u>
Elective <sup>3</sup> .....	1		15
PMS 100 Orientation to PAMS .....	<u>1</u>		
	(16) 15		

**SOPHOMORE YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH 101 Chem Molecular Sci <sup>2</sup> .....	3	CH 201 Chem Quant Sci .....	3
CH 102 General Chem Lab .....	1	CH 202 General Quant Lab .....	1
MEA 200 Intro to Oceanography .....	3	Economics <sup>5</sup> .....	3
MEA 210 Oceanography Lab .....	1	MEA 220 Marine Biology .....	3
Political Science <sup>4</sup> .....	3	MEA 250 Intro to Coastal Environments .....	3
ZO 150 Animal Diversity .....	<u>4</u>	MEA 251 Coastal Lab .....	1
	15	PE Option <sup>6</sup> .....	<u>1</u>
			15

**JUNIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
ARE 336 Intro Resource and Env Econ .....	3	Chemistry Option <sup>7</sup> .....	3
BO 360 Introduction to Ecology .....	3	ENG 33* Advanced Writing Elective .....	3
BO 365 Ecology Lab .....	1	Literature Elective <sup>8</sup> .....	3
PY 211 (or 205) College Physics I <sup>2</sup> .....	4	MEA 469 Ecology Coastal Resources .....	3
ST 311 Introduction to Statistics .....	<u>3</u>	PY 212 (or 208) College Physics II .....	<u>4</u>
	14		16

**SUMMER SESSION I**

MEA 459 Coastal Processes .....	5
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**SENIOR YEAR**

<i>Fall Semester</i>	<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
Advised Elective <sup>9</sup> .....	3	Advised Elective <sup>9</sup> .....	3
Visual or Performing Arts, or History Elective <sup>8</sup> .....	3	MEA Option <sup>10</sup> .....	3
History/Philosophy/Religion Elective <sup>8</sup> .....	3	NR 400 Management of Natural Res.....	4
PS 336 Global Environ Politics .....	3	SSC 200 Soil Science.....	4
ZO 420 Intro to Fisheries Science .....	<u>3</u>		14
	15		

Minimum total hours required for  
graduation.....124<sup>11</sup>

<sup>1</sup> Availability of ENG 101 is not guaranteed in the fall semester. Those students who will take this course in the spring semester of the freshman year should select a course listed in the spring semester to take in the fall.

<sup>2</sup> Grade of C- or higher required in CH 101; ENG 101; MA 131; PY 211.

<sup>3</sup> Any Physical Education course at the 100 level.

<sup>4</sup> PS 201 or PS 202.

<sup>5</sup> EC (ARE) 201 or EC 205.

<sup>6</sup> PE 253 or 226.

<sup>7</sup> MEA 323 or MEA 473.

<sup>8</sup> These courses must be selected from the approved GER Listings for Social Sciences and Humanities and must include: 3 hours in literature; 3 hours in history, philosophy, or religion, 3 hours in the visual or performing arts or history. At least one course selection must focus on a non-English speaking culture.

<sup>9</sup> Advised electives to be chosen with advisor and should be an MEA course at the 300 level or above or an MDS course at the 300 level or above.

<sup>10</sup> MEA Option is any MEA course or PRT 462 Introduction to GIS.

<sup>11</sup> Graduation also requires foreign language proficiency at the FL\_102 level.