

**GENERAL EDUCATION REQUIREMENTS****GROUP I – 15 HOURS/5 COURSES**

- A. English 101 (Grade of “C” or better) 3 \_\_\_\_\_  
 English 102 (Grade of “C” or better) 3 \_\_\_\_\_  
 Literature 3 \_\_\_\_\_
- B. Art, Communication Arts, Dance,  
 Modern Languages, Music,  
 Philosophy (6 HRS FROM TWO  
DEPARTMENTS)
- \_\_\_\_\_ 3 \_\_\_\_\_  
 \_\_\_\_\_ 3 \_\_\_\_\_

**GROUP II – 15 HOURS/5 COURSES**

- A. History 101 3 \_\_\_\_\_  
 History 102 3 \_\_\_\_\_
- B. Anthropology, Economics, History,  
 Human Geography, Political  
 Science, Psychology, or  
 Sociology/Conflict Analysis and  
 Dispute Resolution (9 HRS From  
THREE DEPARTMENTS)
- \_\_\_\_\_ 3 \_\_\_\_\_  
 \_\_\_\_\_ 3 \_\_\_\_\_  
 \_\_\_\_\_ 3 \_\_\_\_\_

**GROUP III – 12 HOURS/4 COURSES**

- SATISFIED BY MAJOR

**GROUP IV – 3 HOURS/1 COURSE**

- PHEC 106 3 \_\_\_\_\_

**OTHER ELECTIVES (if any)**

- \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

\* A “C” or better is required before enrolling in  
 courses for which these are a prerequisite AND  
 as a requirement for graduation.

**BIOLOGY REQUIREMENTS**

A minimum of 40 credit hours of Biology with a GPA of 2.0  
 and at least 20 credit hours at the 300/400 level.

**BIOLOGY CORE REQUIREMENTS**

- |           |                             |         |
|-----------|-----------------------------|---------|
| *BIOL 210 | Biology: Concepts & Methods | 4 _____ |
| *BIOL 212 | Intro. to Plant Biology     | 4 _____ |
| *BIOL 213 | Zoology                     | 4 _____ |
| BIOL 350  | Cell Biology                | 4 _____ |
| BIOL 360  | Genetic Analysis            | 4 _____ |
| OR        |                             |         |
| BIOL 370  | Molecular Genetics          | 4 _____ |
| BIOL 418  | Biology Seminar             | 1 _____ |

**ADDITIONAL BIOLOGY COURSE WORK**

- |          |         |         |
|----------|---------|---------|
| BIOL 310 | Ecology | 4 _____ |
|----------|---------|---------|

**ENVIRONMENTAL MARINE SCIENCE REQUIREMENTS**

\*UMES Courses in major require a “C” or better

- |              |                                |         |
|--------------|--------------------------------|---------|
| *BIOL 201    | Marine Zoology                 | 4 _____ |
| *BIOL 202    | Marine Botany                  | 4 _____ |
| BIOL 401     | Wetland Ecology                | 4 _____ |
| BIOL 410     | Estuarine Biology              | 3 _____ |
| *ENV SCI 202 | Oceanography                   | 4 _____ |
| *ENV SCI 221 | Principles of Environ. Science | 4 _____ |
| *ENV SCI 403 | Marine Ecotoxicology           | 4 _____ |
| *ENV SCI 460 | Earth Science                  | 3 _____ |

**COURSE WORK IN RELATED SCIENCES**

- |                |  |           |
|----------------|--|-----------|
| *CHEMISTRY 121 | General Chemistry I                        | 4 _____   |
| *CHEMISTRY 122 | General Chemistry II                       | 4 _____   |
| CHEMISTRY 221  | Organic Chem. I                            | 4 _____   |
| PHYSICS 121    | General Physics I                          | 4 _____   |
| PHYSICS 123    | General Physics II                         | 4 _____   |
| GEOG 105       | Intro. to Physical Geography               | 4 _____   |
| MATH 155       | Mod. Statistics Computer Anal.             | 3 _____   |
| MATH 201       | Calculus I                                 | 4 _____   |
| OR             |  |           |
| MATH 160       | Intro. to Applied Calculus                 | 4/3 _____ |
| MATH 202       | Calculus II                                | 4 _____   |
| OR             |  |           |
| §              | Environmental Elective<br>(see list below) | 4/3 _____ |

§Choose ONE of the following Environmental Electives:

- |          |                   |          |                   |
|----------|-------------------|----------|-------------------|
| GEOG 219 | Map analysis      | GEOG 411 | Geomorphology     |
| GEOG 311 | Coastal Processes | ECON 415 | Env. Economics    |
| GEOG 321 | Remote Sensing    | POSC 360 | Env. Policy       |
| GEOG 401 | Soil, Water, Env. | BIOL 433 | Env. Microbiology |
| GEOG 402 | Env. Planning     |          |                   |

Revised: May 3, 2007

30 Hrs. of 300/400 level work with a grade of C or better required for graduation.  
 - All students must complete a minimum of 120 credits for graduation.

## BIOLOGY/ENVIRONMENTAL-MARINE SCIENCE CURRICULUM GUIDE

Freshman – Fall Semester		Freshman – Spring Semester	
Course	Credits	Course	Credits
Biol 210	4	Biol 212	4
Chem 121	4	Chem 122	4
Engl 101	3	Engl 102	3
Hist 101	3	Hist 102	3
		Phec 106	3
<b>TOTAL</b>	<b>14</b>	<b>TOTAL</b>	<b>17</b>
<b>Cum. Total</b>	<b>14</b>	<b>Cum. Total</b>	<b>31</b>
Sophomore – Fall Semester		Sophomore – Spring Semester	
Course	Credits	Course	Credits
Biol 213	4	Biol 310	4
Chem 221	4	Geog 105	4
<sup>F</sup> Biol 202 Marine Botany	4	<sup>S</sup> Biol 201 Marine Zool	4
<sup>F</sup> Envs 202 Oceanography	4	<sup>S</sup> Envs 202 Princip.of E.S.	4
<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>16</b>
<b>Cum. Total</b>	<b>47</b>	<b>Cum. Total</b>	<b>63</b>
Junior – Fall Semester		Junior – Spring Semester	
Course	Credits	Course	Credits
<sup>F</sup> Biol 401	4	Phys 123	4
Biol 350	4	Math 155	3
Phys 121	4	Math 160 *	3
English Literature	3	Gen. Ed. I-B	3
		Gen. Ed. II-B	3
<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>16</b>
<b>Cum. Total</b>	<b>78</b>	<b>Cum. Total</b>	<b>94</b>
Senior – Fall Semester		Senior – Spring Semester	
Course	Credits	Course	Credits
<sup>F</sup> Envs 403 Mar. Ecotox.	4	Biol 3XX / 4XX	3
Gen. Ed. II-B	3	Gen Ed. I B and II B	6
Biol 360 / 370	4	Biol 418	1
<sup>F</sup> Biol 410	3	Environmental Elec. **	3
		<sup>S</sup> Envs 460 Earth Science	3
<b>TOTAL</b>	<b>14</b>	<b>TOTAL</b>	<b>16</b>
<b>Cum. Total</b>	<b>108</b>	<b>Cum. Total</b>	<b>124</b>

\* Math 201 (4 cr.) may be taken instead of Math 160.

\*\*If Math 202 is taken instead, the Environmental Elective will not be required.

<sup>F</sup> Offered only in fall

<sup>S</sup> Offered only in spring