REQUEST FOR ADDING, CHANGING, SUSPENDING OR DROPPING AN UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources
College: Agriculture
Name of Concentration: Forest Resource Management
Name of Curriculum/Major: Natural Resource Ecology and Management
Type of Degree: B.S.
Date: 9/15/2015

Has this change been discussed with and approved by all departments/colleges affected? Yes ( ) No ( ) N/A ( X )

ATTACH JUSTIFICATION for all actions: Use separate sheet.
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]
ATTACH FORM D ADDENDUM for all new concentration or changes involving General Education courses.

ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)

( X ) CHANGING: Regardless if all semesters of a concentration are to be changed or only parts, the present and proposed (eight-semester) recommended path should be attached on separate pages. On the Present recommended path, use strikeout and on the Proposed recommended path, highlight areas to identify deletions and additions. Do not use boldface to designate changes as boldface is reserved for critical requirements within the recommended path. Explain all changes adequately on attachment.

( ) SUSPENDING: Provide an adequate explanation for suspending the concentration on plain sheets and attach.

( ) DROPPING: Provide an adequate explanation for dropping the concentration on plain sheets and attach.

CONCENTRATION

<table>
<thead>
<tr>
<th>PRESENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total semester hours in current concentration: 48</td>
<td>Total semester hours in proposed concentration: 42</td>
</tr>
</tbody>
</table>

APPROVALS:

Department Faculty Approval Date: 9/15/2015

D. [Signature] 11 Oct 16

Department Chair's Signature (Date)

College Dean's Signature (Date)

Chair, FS C & C Committee (Date)

College/Division/Department Contact: Jennifer Neal

Contact E-mail: jshears@email
# GENERAL EDUCATION REQUIREMENTS

When a department adds a new curriculum or makes changes in an existing one, a Form D Addendum must also be submitted. This form is simply a list of those courses in the curriculum that satisfy the General Education requirement. Include course rubric, number, and credit hours when curricula differ from the default values. Indicate the curriculum semester for all General Education courses.

<table>
<thead>
<tr>
<th>General Education Requirement</th>
<th>Course(s)</th>
<th>Credit Hours</th>
<th>Curriculum Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition (6 hrs.)</td>
<td>ENGL 1001 or 1004</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>ENGL 2000</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Analytical Reasoning (6 hrs.)</td>
<td>MATH 1021</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>(At least 3 hours credit must be from a MATH course.)</td>
<td>MATH 1431</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Arts (3 hrs.)</td>
<td>General Education arts course</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Humanities (9 hrs.)</td>
<td>CMST 2060</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>PHIL 2020 (as an Area of Concentration course)</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>General Education humanities course</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Natural Sciences (9 hrs.)</td>
<td>BIOL 1201, 1202</td>
<td>6 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>(If 2 course sequence is taken in the physical sciences, the additional 3 hour course must be from the life sciences, and vice versa.)</td>
<td>CHEM 1201</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Social Sciences (6 hrs.)</td>
<td>AGEC 2003</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>(At least three hours at the 2000-level.)</td>
<td>General education social science course</td>
<td>3 (x)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; (x) 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
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Departments and programs should employ the following wording where possible to ensure consistency across curricula in the description of General Education requirements.

* If 2 course natural science sequence is taken in the physical sciences, the additional 3 hour natural science course must be from the life sciences, and vice versa.

**English Composition**
English 1001 or 1004.................................................................3
English 2000.................................................................3

**Natural Sciences**
BIOL 1201, BIOL 1202.................................................................6
CHEM 1201*.................................................................3

**Social Sciences**
AGEC 2003.................................................................3
General education social science course.................................................................3

**Analytical Reasoning**
MATH 1021.................................................................3
MATH 1431.................................................................3

**Humanities**
CMST 2060.................................................................3
PHIL 2020.................................................................3
General education humanities course.................................................................3

**Arts**
General education arts course.................................................................3
SUMMARY OF CHANGES:

1) Moved RNR 3004, RNR 3106, and RNR 4032 to required courses from “Select 11 hours from” list. Preserved choice of RNR 4150 and RNR 4900.

2) Remove RNR 1002, which is a curriculum-wide change.

3) Added Honors versions of required courses (e.g., BIOL 1207, CHEM 1422).

JUSTIFICATION:
RNR 1002 will no longer be offered on a regular basis. Movement of RNR 3004, RNR 3106, and RNR 4032 to required courses better reflects actual course offerings and student course subscription patterns. Requirement of RNR 3004 also addressing a perceived deficiency in GIS noted by Society of American Foresters accreditation team.

Summary of credit hour changes:

| Courses added to NREM core: | Free electives | 5 cr. |
| Courses added to concentration: | RNR 3004; RNR 3106; RNR 4032; select from RNR 4150 or 4900 | 10 cr. |
| Courses options added that did not affect credit hours: | BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030; PHIL 1021 | No change |
| Courses options removed that did not affect credit hours: | MATH 1022; CHEM 1212; | No change |
| Courses removed from NREM core: | RNR 1002 | 1 cr. |
| Courses removed from the concentration: | RNR 2043; Select 11 hours from: GEOG 4044, 4070, MC 3000, MGT 3200, 3320, 4113, MKT 3401, RNR 2031/2072, 3018, 3106, 3107, 4032, 4033, 4107, or 4151. 2 hours of RNR 3041 | 16 cr. |

Net concentration change: 6 cr.
**PROPOSED**

The Natural Resource Ecology and Management area of concentration in FOREST RESOURCES MANAGEMENT is intended for students primarily interested in managing forests as a sustainable natural resource. It is designed to provide students with an appreciation of numerous aspects of forest resource management including timber and non-timber resources and prepare them for employment with public or private entities in forest resource management. Coursework follows guidelines for professional certification by the Society of American Foresters upon graduation.

**BASIC SCHOLASTIC EXPECTATIONS.**
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study*
*Maintain a cumulative and LSU GPA of 2.0*
*Students entering the program with 30 or more semester hours will take one additional elective in place of AGRI 1001.*

**CRITICAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>Sem 1: MATH 1021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sem 2: MATH 1431</td>
</tr>
<tr>
<td>Sem 3: CHEM 1201</td>
</tr>
<tr>
<td>Sem 4: RNR 1010/1071; BIOL 1201</td>
</tr>
<tr>
<td>Sem 5: RNR 2101/2001</td>
</tr>
</tbody>
</table>

**RECOMMENDED PATH**

<table>
<thead>
<tr>
<th>Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical: MATH 1021.</td>
</tr>
</tbody>
</table>

| BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] | 3 |
| BIOL 1208/1209 BIOL LAB SCI MAJ I [CR: BIOL 1201] | 1 |
| ENGL 1001 ENGL COMPOSITION | 3 |
| MATH 1021 COLLEGE ALGEBRA | 3 |
| RNR 1010/1071 INTRO NAT RES ECOL | 4 |
| AGRI 1001 INTR TO AGRICULTURE | 1 |

Total Semester Hours: 15

<table>
<thead>
<tr>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical: MATH 1022/1431</td>
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</table>

| BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] | 3 |
| BIOL 1209/1503 BIOL LAB SCI MAJ II [BIOL 1208 CR: BIOL 1202] | 1 |
| MATH 1431 | 3 |
| GEN. ED. COURSE – ARTS | 3 |
| GEN. ED. COURSE – SOCIAL SCIENCES | 2 |

Total Semester Hours: 16

<table>
<thead>
<tr>
<th>Semester 3</th>
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<tbody>
<tr>
<td>Critical: CHEM 1201</td>
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| CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] | 3 |
| AGEC 2003 | 3 |
| RNR 2001 TREES & WDY PLANTS SE | 2 |
| RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] | 3 |
| CMST 2060 PUBLIC SPEAKING | 3 |
| AREA OF CONCENTRATION COURSE1 | 2 |

Total Semester Hours: 17

**Semester 4**

<table>
<thead>
<tr>
<th>Critical: RNR 1010/1071; BIOL 1201</th>
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<tbody>
<tr>
<td>RNR 2039/2071 INT RNR RESRC PLCY</td>
</tr>
<tr>
<td>EXST 2201 STATISTICAL ANALYSIS [MATH 1021]</td>
</tr>
<tr>
<td>ENGL 2000 ENGLISH COMP [ENGL 1001]</td>
</tr>
<tr>
<td>AREA OF CONCENTRATION COURSES1</td>
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</table>

Total Semester Hours: 18

<table>
<thead>
<tr>
<th>Semester 5</th>
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<tbody>
<tr>
<td>Critical: RNR 2101/2001</td>
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| RNR 2102 NAT RES MEASUR & GIS | 3 |
| RNR 3002 SIL.VICULTURE [RNR 2101] | 2 |
| GEN. ED. COURSE – HUMANITIES | 3 |
| AREA OF CONCENTRATION COURSES1 | 8 |

Total Semester Hours: 16

<table>
<thead>
<tr>
<th>Semester 6</th>
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<tbody>
<tr>
<td>AREA OF CONCENTRATION COURSES1</td>
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<tr>
<td>FREE ELECTIVES1</td>
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Total Semester Hours: 16

<table>
<thead>
<tr>
<th>Semester 7</th>
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<tr>
<td>AREA OF CONCENTRATION COURSES1</td>
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Total Semester Hours: 15

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<tr>
<th>Semester 8</th>
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<tbody>
<tr>
<td>RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004]</td>
</tr>
<tr>
<td>RNR 4900 or RNR 4150</td>
</tr>
<tr>
<td>FREE ELECTIVES</td>
</tr>
</tbody>
</table>

Total Semester Hours: 15

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1 – Forest Resource Management area of concentration courses: AGRO 2051, CHEM1212, ENTMT/PHIL 4018, PHIL 2020, RNR 2003, 3004, 3006, 3034, 306, 307, 308, 3041, 3103, 3110, 3046, 4001, 4012, 4036, 4038. **Select from RNR 4150 or 4900.** Students must complete fall courses RNR 3002 and 4001 before 8-week spring courses RNR 3034, 3036, 3037, 3040, 3041, 3103, and 3105.

2 – The 6th semester is intended to include the 8 week field camp experience (RNR 3034, 3036, 3037, 3040, 3041) preceded by 8 week on-campus courses (RNR 3103, 3105, 4032). Students shall only enroll in 8 week area of concentration and 8 week elective courses during this semester and shall expect to be off campus extended periods of time, including overnight trips, during the second 8 weeks.
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*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study*
*Maintain a cumulative and LSU GPA of 2.0*
*Students entering the program with 30 or more semester hours will take one additional elective in place of AGRI 1001.*

**CRITICAL REQUIREMENTS**
- Sem 1: MATH 1021
- Sem 2: MATH 1431
- Sem 3: CHEM 1201
- Sem 4: RNR 1010/1071; BIOL 1201
- Sem 5: RNR 2101/2001

**RECOMMENDED PATH**

<table>
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<tr>
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<tr>
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</tr>
<tr>
<td></td>
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<td>RNR 1010/1071 NAT RES MEASUR &amp; GIS</td>
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<tr>
<td></td>
<td>RNR 1010/1071 INTRO NAT RES ECOL</td>
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<tr>
<td></td>
<td>RNR 1010/1071 INTRO NAT RESOURCE MGT [CR: RNR 1010/1071]</td>
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<td></td>
<td>AGRI 1001 INTR TO AGRICULTURE</td>
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<tr>
<td><strong>Total Semester Hours:</strong></td>
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<table>
<thead>
<tr>
<th>Semester</th>
<th>Critical: MATH 1022/1431</th>
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<tbody>
<tr>
<td></td>
<td>BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201]</td>
</tr>
<tr>
<td></td>
<td>BIOL 1209 BIOL LAB SCI MAJ II [BIOL 1208]</td>
</tr>
<tr>
<td></td>
<td>CR: BIOL 1202</td>
</tr>
<tr>
<td></td>
<td>CHEM 1201 GEN CHEMISTRY I [CR: MATH 1022/1023/1431/1550/1551]</td>
</tr>
<tr>
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<td>MATH 1431</td>
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<tr>
<td></td>
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<td>EXST 2201 STATISTICAL ANALYSIS [MATH 1021]</td>
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</tr>
<tr>
<td>FREE ELECTIVES</td>
<td>5</td>
</tr>
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<td><strong>Total Semester Hours:</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

1 Students interested in professional certification in forestry, participation in required forestry camp courses, or graduate and professional school are advised to take MATH 1431.
2 Forest Resource Management area of concentration courses: AGRO 2051, CHEM 2112, ENTM/PLHL 4018, PHIL 2020, RNR 2003, 2043, 3034, 3036, 3037, 3040, 3041, 3103, 3105, 4001, 4036, 4038. *Must take three different sections of RNR 3041 (1 credit hour each) for a total of three credit hours.* Students must complete all core courses RNR 3002 and 4001 before 8-week spring courses RNR 3034, 3036, 3037, 3040, 3041, 3103, and 3105. Select 4-5 hours from: GEOG 4044, 4070, MC 3000, MGT 3200, 3220, 4113, MKT 3401, RNR 2031/2072, 3018, 3106, 3107, 4032, 4033, 4107, or 4151.
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REQUEST FOR ADDING, CHANGING, SUSPENDING
OR DROPPING AN
UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources
College: Agriculture
Name of Concentration: Wildlife Habitat Conservation and Management
Name of Curriculum/Major: Natural Resource Ecology and Management
Type of Degree: B.S.

Date: 9/15/2015

Has this change been discussed with and approved by all departments/colleges affected? Yes ( ) No ( ) N/A (X)

ATTACH JUSTIFICATION for all actions: Use separate sheet.
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]
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ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)

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<tr>
<td>Total semester hours in current concentration: 47-49</td>
<td>Total semester hours in proposed concentration: 45-47</td>
</tr>
</tbody>
</table>

APPROVALS:
Department Faculty Approval Date: 5/2/2016

[Signature]
Chair, FSCC

D. Glenn Ratchford
Dept. Chair

[Signature]
10/18/16 (Date)

College Faculty Approval Date: 10/27/16

[Signature]
William B. Richardson

College Dean's Signature: (Date)

[Signature]
3/8/17 (Date)

Academic Affairs Approval: (Date)

[Signature]

FORM E ADDENDUM
GENERAL EDUCATION REQUIREMENTS

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<tbody>
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<td>ENGL 1001 or 1004</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
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<tr>
<td></td>
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<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
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<td>Analytical Reasoning (6 hrs.)</td>
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<td>(At least 3 hours credit must be from a MATH course.)</td>
<td>MATH 1022/1431</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
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<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
<tr>
<td>Humanities (9 hrs.)</td>
<td>CMST 2060</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
<tr>
<td>(If 2 course sequence is taken in the physical sciences, the additional 3 hour course must be from the life sciences, and vice versa.)</td>
<td>General Education humanities course</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
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<td>General Education humanities course</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
<tr>
<td>Natural Sciences (9 hrs.)</td>
<td>BIOL 1201, 1202</td>
<td>6</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
<tr>
<td>(At least three hours at the 2000-level.)</td>
<td>CHEM 1201</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
<tr>
<td>Social Sciences (6 hrs.)</td>
<td>AGEC 2003/POLI 1001/2053/2057</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
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<tr>
<td></td>
<td>SOCL 2001/POLI 2051</td>
<td>3</td>
<td>(x) 1st (x) 5th (x) 2nd (x) 6th (x) 3rd (x) 7th (x) 4th (x) 8th</td>
</tr>
</tbody>
</table>
RECOMMENDED WORDING FOR GENERAL EDUCATION REQUIREMENTS

Departments and programs should employ the following wording where possible to ensure consistency across curricula in the description of General Education requirements.

* If 2 course natural science sequence is taken in the physical sciences, the additional 3 hour natural science course must be from the life sciences, and vice versa.

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Code</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>English Composition</td>
<td>English 1001 or 1004</td>
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<td>English 2000</td>
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<tr>
<td>Natural Sciences</td>
<td>BIOL 1201, BIOL 1202</td>
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<td></td>
<td>CHEM 1201*</td>
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<tr>
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<td>AGEC 2003/POLI 1001/2053/2057</td>
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</tr>
<tr>
<td></td>
<td>SOCL 2001/POLI 2051</td>
<td>3</td>
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<tr>
<td>Analytical Reasoning</td>
<td>MATH 1021</td>
<td>3</td>
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<tr>
<td></td>
<td>MATH 1431</td>
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<td>General education humanities course</td>
<td>3</td>
</tr>
<tr>
<td>Arts</td>
<td>General education arts course</td>
<td>3</td>
</tr>
</tbody>
</table>
SUMMARY OF CHANGES:
1) Remove MATH 1022 and require MATH 1431. Calculus is required by many graduate programs.

2) Change AGRO 2051/RNR 4025/4900/4033/3004 to requiring RNR 3004 and AGRO 2051 or RNR 3108. This reflects input from the accrediting committee of the Society of the American Foresters. This change also resolves a pre-requisite issue for RNR 4101.

3) Remove RNR 2043 and replace with RNR 4150. This reflects input from the accrediting committee of the Society of the American Foresters.

4) Change select course or course pair from RNR 3106, RNR 3107, and RNR 4032 to choose only one of the three courses.

5) Remove option to take EMS 1011 and EMS 3040. This reflects input from the accrediting committee of the Society of the American Foresters.

6) Remove RNR 1002, which is a curriculum-wide change.

7) Remove option for CHEM 1212, because BIOL 1208 and BIOL 1209 are required for RNR 2101.

8) Added Honors versions of required courses (e.g., BIOL 1207, CHEM 1422).

JUSTIFICATION: Since the original conception of the Area of Concentration (AOC) in Wildlife Habitat Conservation and Management in 2012, the employment and placement landscape has changed for undergraduates in the B.S. in Natural Resource Ecology and Management. The AOC was conceived to place the majority of undergraduates into state and federal agencies as entry-level biologists and technicians. Since 2002, the entry-level requirements for biologists have increased beyond a BS, such that the AOC prepares only for technician level. Consequently, an increasing proportion of undergraduates are entering graduate programs (~40% running average since 2010). Moreover, approximately 40% (since record keeping began in 2010) of undergraduates are finding employment with environmental consulting firms. Thus, only about 20% are being placed into the intended roles with state and federal agencies following graduation, although this number increases post-graduate study. Consequently, the required coursework is being realigned with the needs of graduate study and consulting positions. The emphasis herein is on graduate study, as the faculty intends to increase graduate school placement to 70-80% in the future.

Moreover, the proposed changes reflect concerns raised by the accrediting committee of the Society of the American Foresters regarding perceived deficiencies in GIS (RNR 3004) and hydrology (RNR 4150).

<table>
<thead>
<tr>
<th>Summary of credit hour changes:</th>
<th>Free elective</th>
<th>1 cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses added to NREM core:</td>
<td>RNR 4036; RNR 4038; RNR 4150; Select one course from: RNR 3106, RNR 3107, RNR 4032</td>
<td>12 cr.</td>
</tr>
<tr>
<td>Courses added to concentration:</td>
<td>BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030; PHIL 1021</td>
<td>No change</td>
</tr>
<tr>
<td>Courses options added that did not affect credit hours:</td>
<td>MATH 1022; AGRO 3040; EMS 1011 and EMS 3040; AGRO 2051/RNR 4025/RNR 4033</td>
<td>No change</td>
</tr>
<tr>
<td>Courses options removed that did not affect credit hours:</td>
<td>RNR 1002</td>
<td>1 cr.</td>
</tr>
<tr>
<td>Courses removed from NREM core:</td>
<td>RNR 2043; select from: RNR 4023 or RNR 4040; Select course or pair from: RNR 4032 or RNR 3106, 3107; 2 hours of RNR 3041</td>
<td>10-12 cr.</td>
</tr>
<tr>
<td>Courses removed from the concentration:</td>
<td></td>
<td>0-2 cr.</td>
</tr>
</tbody>
</table>
Supporting Communication:

MATH 1022

Dear Mike Keller,
Thanks for letting us know.
Best regards,
Oliver Dasbach

Dr. Oliver Dasbach,
Professor and Chair
Department of Mathematics
Louisiana State University
301-C Lockett Hall
office 225-578-1618
dasbach@math.lsu.edu | www.math.lsu.edu

On Dec 15, 2016, at 2:14 PM, Michael D Kaller <mkalle1@lsu.edu> wrote:

This e-mail is to inform you that MATH 1022 is proposed to be dropped as a general education course from the B.S. in Natural Resource Ecology and Management. MATH 1431 and 1550 were already included in the program, and all students will be directed to these courses. This change may affect as many as 75 students per year.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College

AGRO 2051

From: Labonte, Don R. [mailto:DLabonte@agcenter.lsu.edu]
Sent: Friday, December 16, 2016 11:18 AM
To: Michael D Kaller
Subject: RE: AGRO 2051

ok

From: Michael D Kaller [mailto:mkalle1@lsu.edu]
Sent: Thursday, December 15, 2016 2:15 PM
To: Labonte, Don R.
Cc: Rutherford, Douglas
Subject: AGRO 2051

Hello Dr. Labonte,

This e-mail is to inform you that AGRO 2051 is being dropped as a restricted elective from the following concentrations in the B.S. in Natural Resource Ecology and Management: Conservation Biology; Wildlife Ecology; Pre-Veterinary Medicine Wildlife and Fisheries. The course will remain in the B.S. in Natural Resource Ecology and Management concentrations: Wetland Science; Forest Resource Management; Forest Enterprise; Wildlife Habitat Conservation and Management. This change will affect under 10 students per year, based on our records.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
This e-mail is to inform you that CHEM 1212 is being proposed to be dropped as a general education course from the following concentrations in the B.S. in Natural Resource Ecology and Management: Conservation Biology; Fisheries and Aquaculture; Wetland Science; Wildlife Ecology. CHEM 1212 will remain in the B.S. in Natural Resource Ecology and Management concentrations: Pre-Veterinary Medicine Wildlife and Fisheries; Forest Resource Management; Forest Enterprise; Wildlife Habitat Concentration and Management. This change will affect under 10 students per year, based on our records.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
The Natural Resource Ecology & Management concentration in WILDLIFE HABITAT CONSERVATION & MANAGEMENT is designed for students interested in conserving, managing, and restoring habitats to promote wildlife, and fish, and habitat enhancement and increase biodiversity. Students will receive additional exposure into the theories and practice of forest land use and wetland classification, and learn more about habitat manipulation, and conservation strategies than in other areas of concentration in natural resource ecology and management. Students also will have the opportunity to take off-campus courses at Lee Memorial Forest and the Louisiana University Marine Consortium (LUMCON) through this area of concentration. Students in WHCM may anticipate employment with state or federal agencies that regulate and/or directly manage land and land uses, governmental agencies involved in restoration, and private environmental consulting firms that provide technical assistance to public and private landowners. Many students in this area of concentration will pursue advanced degrees prior to employment.

BASIC SCHOLASTIC EXPECTATIONS.
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study
*Maintain a cumulative and LSU GPA of 2.0
*Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.

CRITICAL REQUIREMENTS
Sem 1: MATH 1021
Sem 2: MATH 1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH
Semester 1
Critical: MATH 1021.

AGRI 1001 INTR TO AGRICULTURE 1
ENGL 1001 ENGL COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
BIOL 1208/1207 BIOL LAB SCI MAJ [CR: BIOL 1201] 1
RNR 1010/1071 INTRO NAT RES ECOL 4

Total Semester Hours: 15

Semester 2
Critical: MATH 1431

MATH 1431 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
BIOL 1209/1503 3
GEN. ED. COURSE – HUMANITIES 3
GEN. ED. COURSE – ARTS 2

Total Semester Hours: 16

Semester 3
Critical: CHEM 1201

RNR 2039/2071 INT RNR RESRC PLCY 5
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 5
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3
AREA OF CONCENTRATION COURSE 2 2
FREE ELECTIVE 2

Total Semester Hours: 17

Semester 4
Critical: RNR 1001/1070; BIOL 1201

ENGL 2000 ENGLISH COMP [ENGL 1001] 3
CMST 2060 PUBLIC SPEAKING 3
SOCL 2001/POLI 1001/2051/2053/2057 3
GEN. ED. COURSE - HUMANITIES 3
AREA OF CONCENTRATION COURSE 2 4

Total Semester Hours: 16

Semester 5

AGEC 2003 3
EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
RNR 3004 3
AREA OF CONCENTRATION COURSES 2 3
FREE ELECTIVES 3

Total Semester Hours: 16

Semester 6

AREA OF CONCENTRATION COURSES 2 14
FREE ELECTIVE 1

Total Semester Hours: 15

Semester 7

AREA OF CONCENTRATION COURSES 2 13
FREE ELECTIVES 3

Total Semester Hours: 16

Semester 8

RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004] 4
AREA OF CONCENTRATION COURSES 2 9-11
FREE ELECTIVES 4-2

Total Semester Hours: 17

1 Students may elect to take MATH 1550/1551 in place of MATH 1431.
3 The 6th semester is intended to include the 8 week field camp experience (RNR 3034, 3036, 3037, 3040, 3041) preceded by 8 week on-campus courses (RNR 3103, 3105). Students shall only enroll in 8 week area of concentration and 8 week elective courses during this semester and shall expect to be off-campus extended periods of time, including overnight trips, during the second 8 weeks.
PRESENT

The Natural Resource Ecology & Management concentration in WILDLIFE HABITAT CONSERVATION & MANAGEMENT is designed for students interested in conserving, managing, and restoring habitats to promote wildlife, and fish, and habitat enhancement and increase biodiversity. Students will receive additional exposure into the theories and practice of forest land use and wetland classification, and learn more about habitat manipulation, and conservation strategies than in other areas of concentration in natural resource ecology and management. Students also will have the opportunity to take off-campus courses at Lee Memorial Forest and the Louisiana University Marine Consortium (LUMCON) through this area of concentration. Students in WHCM may anticipate employment with state or federal agencies that regulate or directly manage land and land uses, governmental agencies involved in restoration, and private environmental consulting firms that provide technical assistance to public and private landowners. Many students in this area of concentration will pursue advanced degrees prior to employment.

BASIC SCHOLASTIC EXPECTATIONS.
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study
*Maintain a cumulative and LSU GPA of 2.0
*Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.

CRITICAL REQUIREMENTS
Sem 1: MATH 1021
Sem 2: MATH 1022/1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH

Semester 1
Critical: MATH 1021.
AGRI 1001 INTR TO AGRICULTURE 1
ENGL 1001 ENGL COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
BIOL 1208 BIOL LAB SCI MAJ [CR: BIOL 1201]* 3
RNR 1010/1071 INTRO NAT RES ECOL 1
RNR 1202 INTRO NAT RESOURCE MGT [CR: RNR 1010/1070] 4

Total Semester Hours: 16

Semester 2
Critical: MATH 1022/1431
CHEM 1201 GEN CHEMISTRY I [CR: MATH 1022/1023/1431/1550/1551] 3
MATH 1022/1431* 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
BIOL 1209* 3
GEN. ED. COURSE – HUMANITIES 1
GEN. ED. COURSE – ARTS 2

Total Semester Hours: 16

Semester 3
Critical: CHEM 1201
RNR 2039/2071 INT RNR RESRC PLCY 3
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3
AREA OF CONCENTRATION COURSE* 2
FREE ELECTIVE 2

Total Semester Hours: 17

Semester 4
Critical: RNR 1001/1070; BIOL 1201
ENGL 2000 ENGLISH COMP [ENGL 1001] 3
CMST 2060 PUBLIC SPEAKING 3
SOC 2001/POLI 2001 3
GEN. ED. COURSE - HUMANITIES 3
AREA OF CONCENTRATION COURSE* 4

Total Semester Hours: 16

Semester 5
AGEC 2003/POLI 1001/2065/2067 3
EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
AGRO 2051/RNR 4025/4026/4001/3001 2
AREA OF CONCENTRATION COURSE* 3
FREE ELECTIVES 3-2

Total Semester Hours: 16

Semester 6
AREA OF CONCENTRATION COURSES* 14
FREE ELECTIVE 1

Total Semester Hours: 15

Semester 7
AREA OF CONCENTRATION COURSES* 13
FREE ELECTIVES 2

Total Semester Hours: 46

Semester 8
RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004] 4
AREA OF CONCENTRATION COURSE* 14-14
FREE ELECTIVES 2-0

Total Semester Hours: 17

1 - Students may elect to take CHEM 1212 in place of BIOL 1208 and 1209.
2 - Students interested in professional certification in forestry, participation in required forestry camp courses, or graduate and professional school are advised to take MATH 1431. Students may elect to take MATH 1550/1551 in place of MATH 1431.
3 - Wildlife Habitat Conservation & Management areas of concentration courses: REQUIRED: CHEM 2060/2261/PHYS 2001, RNR 2001, 2043, 3002, 3034, 3036, 3040, 3041*, 3103, 3105, 3018, 4001, 4033, 4103, 4107. Select one from: RNR 3108 or AGRO 3040. Select one from: RNR 4023 or 4040. Select one course or course pair from: RNR 4032 or 3106, RNR 3107. Select one pair from: RNR 4036 and 4038 or EMS 1011 and 3040.
4 - The 6th semester is intended to include the 8 week field camp experience (RNR 3034, 3036, 3037, 3040, 3041) preceded by 8 week on-campus courses (RNR 3103, 3105). Students shall only enroll in 8 week area of concentration and 8 week elective courses during this semester and shall expect to be off campus extended periods of time, including overnight trips, during the second 8 weeks.
REQUEST FOR ADDING, CHANGING, SUSPENDING OR DROPPING AN UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources  
College: Agriculture  
Name of Concentration: Ecological Restoration  
Name of Curriculum/Major: Natural Resource Ecology and Management  
Type of Degree: B.S.  
Date: 9/15/2015

Has this change been discussed with and approved by all departments/colleges affected? Yes ( ) No ( ) N/A ( X )

ATTACH JUSTIFICATION for all actions: Use separate sheet.  
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]  
ATTACH FORM D ADDENDUM for all new concentration or changes involving General Education courses.

ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)

( X ) CHANGING: Regardless if all semesters of a concentration are to be changed or only parts, the present and proposed (eight-semester) recommended path should be attached on separate pages. On the Present recommended path, use strikeout and on the Proposed recommended path, highlight areas to identify deletions and additions. Do not use boldface to designate changes as boldface is reserved for critical requirements within the recommended path. Explain all changes adequately on attachment.

( ) SUSPENDING: Provide an adequate explanation for suspending the concentration on plain sheets and attach.

( ) DROPPING: Provide an adequate explanation for dropping the concentration on plain sheets and attach.

CONCENTRATION

<table>
<thead>
<tr>
<th>PRESENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total semester hours in current concentration:</td>
<td>42</td>
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</tbody>
</table>

APPROVALS:

Department Faculty Approval Date: 5/2/2016  
College Faculty Approval Date: 10/3/14  
College Dean's Signature: 10/27/14  
Academic Affairs Approval: 3/8/17

College/Division/Department Contact: Jennifer Neal  
Contact E-mail: jshew1@lsu.edu
### GENERAL EDUCATION REQUIREMENTS

When a department adds a new curriculum or makes changes in an existing one, a Form D Addendum must also be submitted. This form is simply a list of those courses in the curriculum that satisfy the General Education requirement. Include course rubric, number, and credit hours when curricula differ from the default values. Indicate the curriculum semester for all General Education courses.

<table>
<thead>
<tr>
<th>General Education Requirement</th>
<th>Course(s)</th>
<th>Credit Hours</th>
<th>Curriculum Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition (6 hrs.)</td>
<td>ENGL 1001 or 1004</td>
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<td></td>
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<tr>
<td></td>
<td>ENGL 2000</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Analytical Reasoning (6 hrs.)</td>
<td>MATH 1021</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(At least 3 hours credit must be from a MATH course.)</td>
<td>MATH 1431</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arts (3 hrs.)</td>
<td>General Education arts course</td>
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<td></td>
</tr>
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<td>SOCL 2001/POLI 2051</td>
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RECOMMENDED WORDING FOR GENERAL EDUCATION REQUIREMENTS

Departments and programs should employ the following wording where possible to ensure consistency across curricula in the description of General Education requirements.

* If 2 course natural science sequence is taken in the physical sciences, the additional 3 hour natural science course must be from the life sciences, and vice versa.

English Composition
English 1001 or 1004.................................................................3
English 2000.................................................................3

Natural Sciences
BIOL 1201, BIOL 1202.................................................................6
CHEM 1201*.................................................................3

Social Sciences
AGEC 2003/ECON 2030/POLI 1001/2053/2057.................................3
SOCL 2001/POLI 2051.................................................................3

Analytical Reasoning
MATH 1021.................................................................3
MATH 1431.................................................................3

Humanities
CMST 2060.................................................................3
General Education humanities course .................................................3
General Education humanities course .................................................3

Arts
General Education arts course .................................................3
SUMMARY OF CHANGES:
1) Remove MATH 1022 and require MATH 1431. Calculus is required by many graduate programs.
2) Remove AGEC 2003 and replace with ECON 2030 for a general education social science course.
3) Remove RNR 1002, which is a curriculum-wide change.
4) Remove option for CHEM 1212, because BIOL 1208 and BIOL 1209 are required for RNR 2101.
5) Added Honors versions of required courses (e.g., BIOL 1207, CHEM 1422).

JUSTIFICATION: RNR 1002 will not be offered on a regular basis in the future. Other changes are either to address oversights (CHEM 1212) or align concentration with curriculum-wide changes (e.g., moving to MATH 1431).

Summary of credit hour changes:

| Courses added to NREM core: | Free electives | 1 cr. |
| Courses added to concentration: | None | No change |
| Courses options added that did not affect credit hours: | BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030; | No change |
| Courses options removed that did not affect credit hours: | MATH 1022; CHEM 1212 | No change |
| Courses removed from NREM core: | RNR 1002 | 1 cr. |
| Courses removed from the concentration: | None | No change |
| Net concentration change: | | 0 cr. |

Supporting Communication:

**CHEM 1212**

Michael D Kaller

Sent: Thu 12/15/2016 2:15 PM

To: Carol M Taylor

Cc: Allen Rutherford (arutherford@lsu.edu)

This email is to inform you that CHEM 1212 is being proposed to be dropped as a general education course from the following concentrations in the B.S in Natural Resource Ecology and Management: Conservation Biology; Fisheries and Aquaculture; Wetland Science; Wildlife Ecology. CHEM 1212 will remain in the B.S. in Natural Resource Ecology and Management concentrations: Pre-Veterinary Medicine Wildlife and Fisheries; Forest Resource Management; Forest Enterprise; Wildlife Habitat Concentration and Management. This change will affect under 10 students per year, based on our records.

Mike Kaller, Ph.D.
Associate Professor and Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
Dear Mike Keller,
Thanks for letting us know.
Best regards,
Oliver Dasbach

Dr. Oliver Dasbach,
Professor and Chair
Department of Mathematics
Louisiana State University
301-C Lockett Hall
office 225-578-1618
dasbach@math.lsu.edu | www.math.lsu.edu

On Dec 15, 2016, at 2:14 PM, Michael D Kaller <mkalle1@lsu.edu> wrote:

This e-mail is to inform you that MATH 1022 is proposed to be dropped as a general education course from the B.S. in Natural Resource Ecology and Management. MATH 1431 and 1550 were already included in the program, and all students will be directed to these courses. This change may affect as many as 75 students per year.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
The BACHELOR OF SCIENCE in NATURAL RESOURCES ECOLOGY & MANAGEMENT provides a broad education in renewable natural resources specifically related to forested, wetland, and coastal ecosystems. The ECOLOGICAL RESTORATION area of concentration builds on this foundation for students planning a career with state, federal, or private entities in environmental and ecological monitoring, ecological restoration, or remediation work. Interest in the restoration of ecosystems disturbed by anthropogenic and natural causes is increasing. Coursework follows recommendations of the Society for Ecological Restoration including knowledge of plant and animal taxonomy, geographic information systems, and wetlands. Many students in this area of concentration will pursue advanced degrees prior to employment.

BASIC SCHOLASTIC EXPECTATIONS.
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study
*Maintain a cumulative and LSU GPA of 2.0
*Students entering the program with 30 or more semester hours will take one more elective in place of AGRI 1001.

CRITICAL REQUIREMENTS
Sem 1: MATH 1021
Sem 2: MATH 4022/4131
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH
Semester 1
Critical: MATH 1021.
BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
BIOL 1203 BIOL LAB SCI MAJ I [CR: BIOL 1201] 1
ENGL 1001 ENGL COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
RNR 1010/1071 INTR NAT RES ECOL 4
RNR 1014 NAT RESOURCE MGT [CR: RNR 1010/1071] 4
AGRI 1001 INTR TO AGRICULTURE 1
Total Semester Hours: 16

Semester 2
Critical: MATH 1022/1431
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
BIOL 1209 BIOL LAB SCI MAJ II [BIOL 1208 CR: BIOL 1202] 1
CHEM 1201 GEN CHEMISTRY I [CR: MATH 1022/1023/1431/1550/1551] 3
MATH 4922/4131 3
GEN. ED. COURSE – ARTS 3
GEN. ED. COURSE – HUMANITIES 3
Total Semester Hours: 16

Semester 3
Critical: CHEM 1201
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
RNR 2001/4020/BIOL 4020/4041 2-4
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3
RNR 2039/2071 INT RNR RESRC PLCY 3
FREE ELECTIVES 2-0
Total Semester Hours: 16

Semester 4
Critical: RNR 1010/1071; BIOL 1201
ENGL 2000 ENGLISH COMP [ENGL 1001] 3
SOCL 2001/POLI 2051 3
CMST 2060 PUBLIC SPEAKING 3
AREA OF CONCENTRATION COURSES 3
FREE ELECTIVES 2
Total Semester Hours: 18

Semester 5
GEN. ED. COURSE – HUMANITIES 3
AGEC 2003/ECON 2030/POLI 1001/2053/2057 3
EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
AREA OF CONCENTRATION COURSES 3
FREE ELECTIVES 2
Total Semester Hours: 15

Semester 6
AREA OF CONCENTRATION COURSES 3
FREE ELECTIVES 1
Total Semester Hours: 16

Semester 7
AREA OF CONCENTRATION COURSES 3
FREE ELECTIVES 2
Total Semester Hours: 17

Semester 8
RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004] 4
AREA OF CONCENTRATION COURSES 11
Total Semester Hours: 15

1- Students may elect to take CHEM 1212 in place of BIOL 1208 and 1209.
2- Students interested in advanced graduate or professional degrees are advised to take MATH 1431. Students may take MATH 1550/1551 in place of MATH 1431.
3- Ecological Restoration area of concentration courses: REQUIRED:
BIOL 1013, BIOL 4017, CHEM 2060/2261/PHYS 2001, EMS/ENV 4010, OCS 4565, RNR 4038, 4103, 4107. Select one course from: RNR 423 or 4040. Select 16 hours from: AGRO 3040, BIOL 4041, 4055, 4141, 4142, 4146, GEOG 2050, GEOF 1001, ENVS 4477, OCS 4165, 4560, RNR 2003, 2031/2072, 3065, 3018, 3106, 3108, 4001, 4011, 4013, 4032, 4033, 4151, or 4900
4- Students seeking federal employment following graduation should consult their academic adviser about federal requirements for animal and plant taxonomy courses.
PROPOSED

The BACHELOR OF SCIENCE in NATURAL RESOURCES ECOLOGY & MANAGEMENT provides a broad education in renewable natural resources specifically related to forested, wetland, and coastal ecosystems. The ECOLOGICAL RESTORATION area of concentration builds on this foundation for students planning a career with state, federal, or private entities in environmental and ecological monitoring, ecological restoration, or remediation work. Interest in the restoration of ecosystems disturbed by anthropogenic and natural causes is increasing. Coursework follows recommendations of the Society for Ecological Restoration including knowledge of plant and animal taxonomy, geographic information systems, and wetlands. Many students in this area of concentration will pursue advanced degrees prior to employment.

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CRITICAL REQUIREMENTS

Sem 1: MATH 1021
Sem 2: MATH 1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH

Semester 1
- Critical: MATH 1021.
- BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
- BIOL 1208 [1208] BIOL LAB SCI MAJ I [CR: BIOL 1201] 1
- ENGL 1001 ENGL COMPOSITION 3
- MATH 1021 COLLEGE ALGEBRA 3
- RNR 1010/1071 INTRO NAT RES ECOL 4
- AGRI 1001 INTR TO AGRICULTURE 1

Total Semester Hours: 15

Semester 2
- Critical: MATH 1431
- BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
- BIOL 1209 [1209] BIOL LAB SCI MAJ II [BIOL 1208 CR: BIOL 1202] 1
- MATH 1431 3
- GEN. ED. COURSE – ARTS 3
- GEN. ED. COURSE – HUMANITIES 3

Total Semester Hours: 16

Semester 3
- Critical: CHEM 1201
- CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
- RNR 2001/4020/Biol 4020/4041 2-4
- RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
- RNR 2102 NAT RES MEASUR & GIS 3
- RNR 2039/2071 INT RNR RESRC PLCY 3
- FREE ELECTIVES 2-5

Total Semester Hours: 15

Semester 4
- Critical: RNR 1010/1071; BIOL 1201
- ENGL 2000 ENGLISH COMP [ENGL 1001] 3
- SOC 2001/POLI 2051 3
- CMST 2060 PUBLIC SPEAKING 3
- AREA OF CONCENTRATION COURSES 2

Total Semester Hours: 18

Semester 5
- GEN. ED. COURSE – HUMANITIES 3
- AGEC 2003/ECON 2030/POLI 1001/2053/2057 3
- EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
- AREA OF CONCENTRATION COURSES 3
- FREE ELECTIVES 2

Total Semester Hours: 15

Semester 6
- AREA OF CONCENTRATION COURSES 4
- FREE ELECTIVES 12

Total Semester Hours: 16

Semester 7
- AREA OF CONCENTRATION COURSES 15
- FREE ELECTIVES 2

Total Semester Hours: 17

Semester 8
- RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004] 4
- AREA OF CONCENTRATION COURSES 11

Total Semester Hours: 15

1 Students may take MATH 1550/1551 in place of MATH 1431.
2 Ecolitical Restoration area of concentration courses: REQUIRED:
   BIOL 1201, BIOL 4017, CHEM 2060/2261/PHYS 2001, EMS/ENVS 4010, OCS 4565, RNR 4038, 4103, 4107. Select one course from:
   RNR 4023 or 4040. Select 16 hours from:
   AGRO 3040, BIOL 4041, 4055, 4141, 4142, 4146, GEOG 2050, GEOG 1001, ENVS 4477, OCS 4165, 4560, RNR 2003, 2031/2072, 3005, 3018, 3106, 3108, 4001, 4011, 4013, 4032, 4033, 4151, or 4900
3 Students seeking federal employment following graduation should consult their academic adviser about federal requirements for animal and plant taxonomy courses.
REQUEST FOR ADDING, CHANGING, SUSPENDING OR DROPPING AN UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources
College: Agriculture
Name of Concentration: Wetland Science
Name of Curriculum/Major: Natural Resource Ecology and Management
Type of Degree: B.S.

Date: 9/15/2015

Has this change been discussed with and approved by all departments/colleges affected? Yes (X) No ( ) N/A ( )

ATTACH JUSTIFICATION for all actions: Use separate sheet.
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]
ATTACH FORM D ADDENDUM for all new concentration or changes involving General Education courses.

ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)
( X ) CHANGING: Regardless if all semesters of a concentration are to be changed or only parts, the present and proposed (eight-semester) recommended path should be attached on separate pages. On the Present recommended path, use strikeout and on the Proposed recommended path, highlight areas to identify deletions and additions. Do not use boldface to designate changes as boldface is reserved for critical requirements within the recommended path. Explain all changes adequately on attachment.
( ) SUSPENDING: Provide an adequate explanation for suspending the concentration on plain sheets and attach.
( ) DROPPING: Provide an adequate explanation for dropping the concentration on plain sheets and attach.

CONCENTRATION

<table>
<thead>
<tr>
<th>PRESENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total semester hours in current concentration:</td>
<td>34-35</td>
</tr>
</tbody>
</table>

APPROVALS:

Department Faculty Approval Date: 5/27/2016
D. Ann Price
11 Oct 16
Department Chair's Signature

College Faculty Approval Date: 10/27/16
William B. Richardson
College Dean's Signature

Chair, FS C & C Committee: John B. Hopple
11/10
(Date)

Academic Affairs Approval: Matthew
7/1/16
(Date)

College/Division/Department Contact: Jennifer Neal
jshew@elsu.edu
Contact E-mail:
GENERAL EDUCATION REQUIREMENTS

When a department adds a new curriculum or makes changes in an existing one, a Form D Addendum must also be submitted. This form is simply a list of those courses in the curriculum that satisfy the General Education requirement. Include course rubric, number, and credit hours when curricula differ from the default values. Indicate the curriculum semester for all General Education courses.

<table>
<thead>
<tr>
<th>General Education Requirement</th>
<th>Course(s)</th>
<th>Credit Hours</th>
<th>Curriculum Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition (6 hrs.)</td>
<td>ENGL 1001 or 1004</td>
<td>3</td>
<td>(x) 1st (5th)</td>
</tr>
<tr>
<td></td>
<td>ENGL 2000</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>Analytical Reasoning (6 hrs.)</td>
<td>MATH 1021</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>(At least 3 hours credit must be from a MATH course.)</td>
<td>PHIL 1021</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>Arts (3 hrs.)</td>
<td>General Education arts course</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>Humanities (9 hrs.)</td>
<td>CMST 2060</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td></td>
<td>General Education humanities course</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>Natural Sciences (9 hrs.)</td>
<td>BIOL 1201, 1202</td>
<td>6</td>
<td>(x) 2nd (6th)</td>
</tr>
<tr>
<td>(If 2 course sequence is taken in the physical sciences, the additional 3 hour course must be from the life sciences, and vice versa.)</td>
<td>CHEM 1201</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>Social Sciences (6 hrs.)</td>
<td>AGEC 2003/POLI 1001/2053/2057</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
<tr>
<td>(At least three hours at the 2000-level.)</td>
<td>SOCL 2001/POLI 2051</td>
<td>3</td>
<td>(x) 4th (8th)</td>
</tr>
</tbody>
</table>
RECOMMENDED WORDING FOR GENERAL EDUCATION REQUIREMENTS

Departments and programs should employ the following wording where possible to ensure consistency across curricula in the description of General Education requirements.

* If 2 course natural science sequence is taken in the physical sciences, the additional 3 hour natural science course must be from the life sciences, and vice versa.

**English Composition**
English 1001 or 1004 ................................................................. 3
English 2000 .............................................................................. 3

**Natural Sciences**
BIOL 1201, BIOL 1202 ................................................................. 6
CHEM 1201* ............................................................................ 3

**Social Sciences**
AGEC 2003/POLI 1001/2053/2057 ..................................................... 3
SOCL 2001/POLI 2051 ................................................................. 3

**Analytical Reasoning**
MATH 1021 ................................................................................ 3
MATH 1431 ................................................................................ 3

**Humanities**
CMST 2060 ................................................................................ 3
General education humanities course ............................................ 3
General education humanities course ............................................ 3

**Arts**
General education arts course ...................................................... 3
SUMMARY OF CHANGES:
1) Remove MATH 1022 and require MATH 1431. MATH 1431 also satisfies requirement for analytical reasoning general education course.

2) Remove AGEC 2003 and replace with ECON 2030 for a general education social science course.

3) Remove RNR 1002, which is a curriculum-wide change.

4) Remove duplicate listings of RNR 2031 and BIOL/RNR 4020.

5) Acknowledge cross-listing of BIOL/RNR 4020.

6) Recognize that RNR 3018 is a pre-requisite for RNR 4011. RNR 3018 was not explicitly included in this Area of Concentration because another set of options exist for students who may not be interested in RNR 4011. Now, RNR 3018 is included in a course set with RNR 2031 and RNR 4011 properly addressing pre-requisites for this path through the concentration.

7) Add RNR 4150 and RNR 3004. This reflects input from the accrediting committee of the Society of the American Foresters. This change also resolves a pre-requisite issue for RNR 4101.

8) Add PHIL 1021 as an option with CHEM 2060/CHEM 2261/PHYS 2001.

9) Remove option for CHEM 1212, because BIOL 1208 and BIOL 1209 are required for RNR 2101.

10) Changed RNR 3002/3105 to RNR 3105 to better meet student needs.

JUSTIFICATION: Since the original conception of the Area of Concentration (AOC) in Wetland Science in 2002, the employment and placement landscape has changed for undergraduates in the B.S. in Natural Resource Ecology and Management. The AOC was conceived to place the majority of undergraduates into state and federal agencies as entry-level biologists and technicians. Since 2002, the entry-level requirements for biologists have increased beyond a BS, such that the AOC prepares only for technician level. Consequently, an increasing proportion of undergraduates are entering graduate programs (~40% running average since 2010). Moreover, approximately 40% (since record keeping began in 2010) of undergraduates are finding employment with environmental consulting firms. Thus, only about 20% are being placed into the intended roles with state and federal agencies following graduation, although this number increases post-graduate study. Consequently, the required coursework is being realigned with the needs of graduate study and consulting positions. The emphasis herein is on graduate study, as the faculty intends to increase graduate school placement to 70-80% in the future.

Moreover, this concentration is being considered for accreditation by the Society of American Foresters as a path to Certified Forester. Deficiencies recognized by the accreditation committee in GIS (RNR 3004) and hydrology (RNR 4150) have been addressed.
Summary of credit hour changes:

| Courses added to NREM core: | Free elective | 1 cr. |
| Courses added to concentration: | RNR 3002; RNR 3004; RNR 3018 (as restricted elective); RNR 4033; RNR 4150 | 12-16 cr. |
| Courses options added that did not affect credit hours: | BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030; PHIL 1021 | No change |
| Courses options removed that did not affect credit hours: | MATH 1022; CHEM 1212; AGEC 2003 | No change |
| Courses removed from NREM core: | RNR 1002 | 1 cr. |
| Courses removed from the concentration: | None | 0 cr. |

Net concentration change: 12-16 cr.

SUPPORTING COMMUNICATION:

PHIL 1021

From: Jeffrey W Roland
Sent: Thursday, August 4, 2016 06:19 PM
To: John A Nyman
Cc: Gregory J Schreieder; Mary J Sirridge
Subject: Re: PHIL 1021

Hi John (if I may),

I think PHIL 1021 would be an excellent addition to your concentration. (To be fair, I think that about pretty much any concentration!)

We have the capacity to handle another 5 students a year in the course, no problem. So there shouldn’t be an issue there.

Anything you need from me, just let me know.

Best,

Jeff

*******************************************************************************
Jeffrey Roland
Associate Professor

Department of Philosophy
102 Coates Hall
Louisiana State University
Baton Rouge LA 70803

Email: jroland@lsu.edu
Phone: (225) 578-2388
Fax: (225) 578-4897
Web: www.lsu.edu/faculty/jroland
On Aug 4, 2016, at 1:46 PM, John A Nyman <jnyman@lsu.edu> wrote:

Dr. Roland,

I'm revising an Area of Concentration within our major in Natural Ecology and Management. What would you think about us making PHIL 2021 required for the 20 or undergraduates in our Wetland Science AOC? I mispoke on the phone; not 20/semester. Probably 5/year. My cell is 225 505-5219; feel free to call that if I'm not at my desk.

andy

John Andrew Nyman, PhD
Professor
School of Renewable Natural Resources
Louisiana State University
327 Renewable Natural Resources, Baton Rouge, LA 70803
office 225-578-4220
jnyman@lsu.edu | lsu.edu | www.rnr.lsu.edu/people/nyman/default.HTM

MATH 1022

Dear Mike Keller,
Thanks for letting us know.
Best regards,
Oliver Dasbach

______________________________
Dr. Oliver Dasbach,
Professor and Chair
Department of Mathematics
Louisiana State University
301-C Lockett Hall
office 225-578-1618
dasbach@math.lsu.edu | www.math.lsu.edu

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Louisiana State University
Associate Rector,
Agriculture Residence College
This e-mail is to inform you that CHEM 1212 is being proposed to be dropped as a general education course from the following concentrations in the B.S. in Natural Resource Ecology and Management: Conservation Biology; Fisheries and Aquaculture; Wetland Science; Wildlife Ecology. CHEM 1212 will remain in the B.S. in Natural Resource Ecology and Management concentrations: Pre-Veterinary Medicine Wildlife and Fisheries; Forest Resource Management; Forest Enterprise; Wildlife Habitat Concentration and Management. This change will affect under 10 students per year, based on our records.

Mike Kaller, Ph.D.
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School of Renewable Natural Resources,
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Associate Rector,
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PROPOSED

The Wetland Science area of concentration in the School of Renewable Natural Resources is designed for students who wish to specialize in wetlands, valued as wildlife and fish habitats, for maintaining water quality, and for other economic benefits. Graduates can anticipate working for private or government agencies that manage, restore, and/or regulate wetlands, for businesses that delineate wetlands, plan and manage mitigation banks, or plan and conduct restoration projects. Coursework follows guidelines for professional certification by the Society of Wetland Scientists upon graduation. Many students in this area of concentration will pursue advanced degrees prior to employment.

BASIC SCHOLASTIC EXPECTATIONS.
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* Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.

CRITICAL REQUIREMENTS
Sem 1: MATH 1021
Sem 2: MATH 1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH

Semester 1
Critical: MATH 1021.
AGRI 1001 INTR TO AGRICULTURE 1
ENGL 1001 ENGL COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
BIOL 1208 BIOL LAB SCI MAJ [CR: BIOL 1201] 1
RNR 1010/1071 INTRO NAT RES ECOL 4
Total Semester Hours: 15

Semester 2
Critical: MATH 1431
CHEM 1201 GEN CHEMISTRY I [CR: MATH 1022/1023/1431/1550/1551] 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
* BIOL 1209 1
MATH 1431 3
* GEN. ED. COURSE – ARTS 3
* FREE ELECTIVES 3
Total Semester Hours: 16

Semester 3
Critical: CHEM 1201
RNR 2039/2071 INT RNR RESRC PLCY 3
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3
Total Semester Hours: 12

Semester 4
Critical: RNR 1010/1071; BIOL 1201
ENGL 2000 ENGLISH COMP [ENGL 1001] 3
CMST 2060 PUBLIC SPEAKING 3
SOCI 2001 POLI 2051 3
GEN. ED. COURSE – HUMANITIES 3
AREA OF CONCENTRATION COURSES 6
Total Semester Hours: 18

Semester 5
RNR 2001/4039/BIOL 4020/4041 2-4
ECON 2030/POLI 1001/2053/2057 3
EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
AREA OF CONCENTRATION COURSES 3
FREE ELECTIVE 6-3
Total Semester Hours: 16

Semester 6
RNR 3105 2
* AGRO 2051 4
AREA OF CONCENTRATION COURSES 3
* GEN. ED. COURSE – HUMANITIES 3
Total Semester Hours: 18

Semester 7
AREA OF CONCENTRATION COURSES 18
Total Semester Hours: 18

Semester 8
RNR 4101 NAT RES MGT; POL; HDIM [RNR 2039/2071, 3004] 4
AREA OF CONCENTRATION COURSE 11
Total Semester Hours: 15

1 - Students may elect to take MATH 1550/1551 in place of MATH 1431.
2 - Wetland Science areas of concentration courses: REQUIRED: CHEM 2060/2261/PHYS 2001/PHIL 1021, OCS 4165; RNR 3004, 3002, 3108, 4013, BIOL/RNR 4020, 4033, 4103, 4107, 4150. Select one course from: RNR 4023 or RNR 4040. Select one course from OCS 4308, 4465, 4560. Select one course group from: either RNR 2031, 3018, and 4011; or RNR 2002 and 4023; or RNR 2002 and 4040.
PRESENT

The Wetland Science area of concentration in the School of Renewable Natural Resources is designed for students who wish to specialize in wetlands, valued as wildlife and fish habitats, for maintaining water quality, and for other economic benefits. Graduates can anticipate working for private or government agencies that manage, restore and/or regulate wetlands, for businesses that delineate wetlands, plan and manage mitigation banks, or plan and construct restoration projects. Coursework follows guidelines for professional certification by the Society of Wetland Scientists upon graduation. Many students in this area of concentration will pursue advanced degrees prior to employment.

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*Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.

CRITICAL REQUIREMENTS

Sem 1: MA' TH 1021
Sem 2: MA' TH 1022/1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1071, BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH

Semester 1
Critical: MA' TH 1021.

AGRI 1001 INTR TO AGRICULTURE 1
ENGL 1001 ENGLISH COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
BIOL 1201 BIOL FOR SCI MAJ [CHEM 1201] 3
BIOL 1208 BIOL LAB SCI MAJ [CR: BIOL 1201] 1
RNR 1010/1071 INTRO NAT RES ECOL 4
RNR 1004 INTSS NAT RESOURC MGT [CR: RNR 1010/1070] 1

Total Semester Hours: 16

Semester 2
Critical: MA' TH 1022/1431

CHEM 1201 GEN CHEMISTRY 1 [CR: MATH 1022/1431/1550/1551] 3
MATH 1022/1432 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
BIOL 1209 1
GEN. ED. COURSE - HUMANITIES 3
GEN. ED. COURSE - ARTS 3

Total Semester Hours: 16

Semester 3
Critical: CHEM 1201

RNR 2039/2071 INT RNR RESC PLCY 3
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3

Total Semester Hours: 12

Semester 4
Critical: RNR 1010/1071; BIOL 1201

ENGL 2000 ENGLISH COMP [ENGL 1001] 3
CMST 2060 PUBLIC SPEAKING 3
SOCIL 201/2051 3
GEN. ED. COURSE - HUMANITIES 3
AREA OF CONCENTRATION COURSES 3 6

Total Semester Hours: 18

Semester 5

RNR 2001/4020/BIOL 4020/4041 2-4
AGRC 2003/2053/2057 3
EXST 2201 STATISTICAL ANALYSIS [MAT'H 1021] 4
AREA OF CONCENTRATION COURSES 3 5
FREE ELECTIVE 1-0

Total Semester Hours: 15

Semester 6

RNR 2031/2072/3002/3105 2-3
AGRO 2051 4
AREA OF CONCENTRATION COURSES 3 9
FREE ELECTIVES 2-1

Total Semester Hours: 17

Semester 7

AREA OF CONCENTRATION COURSES 3 14-15
FREE ELECTIVES 4-3

Total Semester Hours: 18

Semester 8

RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004] 4
FREE ELECTIVES 12

Total Semester Hours: 46

1—Students may elect to take CHEM 1212 in place of BIOL 1208 and 1209.
2—Students may elect to take MATH 1550/1551 in place of MATH 1431.
3—Wetland Science areas of concentration courses: REQUIRED: CHEM 2060/2261/PHYS 2001; OCS 4165, RNR 3108, 4013, 4020, 4103, 4107. Select one course from: RNR 4023 or RNR 4040. Select one course from OCS 4308, 4465, 4560. Select one pair of courses from: either RNR 2031 and 4011; or RNR 2002 and 4023; or RNR 2002 and 4040.
REQUEST FOR ADDING, CHANGING, SUSPENDING OR DROPPING AN UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources
College: Agriculture
Name of Concentration: Fisheries and Aquaculture
Name of Curriculum/Major: Natural Resource Ecology and Management
Type of Degree: B.S.

Date: 9/15/2015

Has this change been discussed with and approved by all departments/colleges affected? Yes ( ) No ( ) N/A (X)

ATTACH JUSTIFICATION for all actions: Use separate sheet.
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]
ATTACH FORM D ADDENDUM for all new concentration or changes involving General Education courses.

ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)

( X ) CHANGING: Regardless if all semesters of a concentration are to be changed or only parts, the present and proposed (eight-semester) recommended path should be attached on separate pages. On the Present recommended path, use strikeout and on the Proposed recommended path, highlight areas to identify deletions and additions. Do not use boldface to designate changes as boldface is reserved for critical requirements within the recommended path. Explain all changes adequately on attachment.

( ) SUSPENDING: Provide an adequate explanation for suspending the concentration on plain sheets and attach.

( ) DROPPING: Provide an adequate explanation for dropping the concentration on plain sheets and attach.

CONCENTRATION

<table>
<thead>
<tr>
<th>PRESENT</th>
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<tr>
<td>Total semester hours in current concentration: 36</td>
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APPROVALS:

Department Faculty Approval Date: 5/2/2016

D. Allenzonted

11 Oct 15

Department Chair’s Signature: (Date)

Chair, FS C & C Committee: (Date)

College Faculty Approval Date: 10/21/14

William B. Richardson

College Dean’s Signature: (Date)

Academic Affairs Approval: (Date)

College/Division/Department Contact: Jennifer Neal

Contact E-mail: jshear@lsu.edu

FORM E ADDENDUM
# GENERAL EDUCATION REQUIREMENTS

When a department adds a new curriculum or makes changes in an existing one, a Form D Addendum must also be submitted. This form is simply a list of those courses in the curriculum that satisfy the General Education requirement. Include course rubric, number, and credit hours when curricula differ from the default values. Indicate the curriculum semester for all General Education courses.

<table>
<thead>
<tr>
<th>General Education Requirement</th>
<th>Course(s)</th>
<th>Credit Hours</th>
<th>Curriculum Semester</th>
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<tr>
<td>English Composition (6 hrs.)</td>
<td>ENGL 1001 or 1004</td>
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<td>Analytical Reasoning (6 hrs.)</td>
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<td>(At least 3 hours credit must</td>
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<td>be from a MATH course.)</td>
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<td>MATH 1431</td>
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<td>Humanities (9 hrs.)</td>
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<td>additional 3 hour course must</td>
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<td>be from the life sciences, and</td>
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<td>CHEM 1201</td>
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<td>( ) 3rd ( ) 8th</td>
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<tr>
<td>Social Sciences (6 hrs.)</td>
<td>AGEC 2003/POLI 1001/2053/2057</td>
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<td>(At least three hours at the</td>
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<td>SOCL 2001/POLI 2051</td>
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Recommended wording for general education requirements

Departments and programs should employ the following wording where possible to ensure consistency across curricula in the description of General Education requirements.

* If 2 course natural science sequence is taken in the physical sciences, the additional 3 hour natural science course must be from the life sciences, and vice versa.

**English Composition**
- English 1001 or 1004 ................................................................. 3
- English 2000 ............................................................................. 3

**Natural Sciences**
- BIOL 1201, BIOL 1202 .............................................................. 6
- CHEM 1201* ............................................................................. 3

**Social Sciences**
- AGEC 2003/POLI 1001/2053/2057 ............................................ 3
- SOCL 2001/POLI 2051 ................................................................. 3

**Analytical Reasoning**
- MATH 1021 ............................................................................. 3
- MATH 1431 ............................................................................. 3

**Humanities**
- CMST 2060 ............................................................................. 3
- General education humanities course .................................... 3
- General education humanities course .................................... 3

**Arts**
- General education arts course ................................................. 3
SUMMARY OF CHANGES:
1) Remove MATH 1022 and require MATH 1431. Graduate programs in fisheries and marine sciences typically require calculus.

2) Remove AGEC 2003 and replace with ECON 2030 for a general education social science course.

3) Remove RNR 1002, which is a curriculum-wide change.

4) Remove option for CHEM 1212, because BIOL 1208 and BIOL 1209 are required for RNR 2101.

5) Added Honors versions of required courses (e.g., BIOL 1207, BIOL 1503).

6) Changed RNR 3002/3105 to RNR 3105 to better meet student needs.

JUSTIFICATION: Since the original conception of the Area of Concentration (AOC) in Wildlife Ecology in 2002, the employment and placement landscape has changed for undergraduates in the B.S. in Natural Resource Ecology and Management. The AOC was conceived to place the majority of undergraduates into state and federal agencies as entry-level biologists and technicians. Since 2002, the entry-level requirements for biologists have increased beyond a BS, such that the AOC prepares only for technician level. Consequently, an increasing proportion of undergraduates are entering graduate programs (~40% running average since 2010). Moreover, approximately 40% (since record keeping began in 2010) of undergraduates are finding employment with environmental consulting firms. Thus, only about 20% are being placed into the intended roles with state and federal agencies following graduation, although this number increases post-graduate study. Consequently, the required coursework is being realigned with the needs of graduate study and consulting positions. The emphasis herein is on graduate study, as the faculty intends to increase graduate school placement to 70-80% in the future.

Summary of credit hour changes:

<table>
<thead>
<tr>
<th>Courses added to NREM core:</th>
<th>Free elective</th>
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<tbody>
<tr>
<td>Courses added to concentration:</td>
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<td>Courses options added that did not affect credit hours:</td>
<td>BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030</td>
<td>No change</td>
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<td>Courses options removed that did not affect credit hours:</td>
<td>MATH 1022; CHEM 1212</td>
<td>No change</td>
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<tr>
<td>Courses removed from NREM core:</td>
<td>RNR 1002</td>
<td>1 cr.</td>
</tr>
<tr>
<td>Courses removed from the concentration:</td>
<td>None</td>
<td>No change</td>
</tr>
</tbody>
</table>

Net concentration change: No net change
Supporting Communication:

MATH 1022

Dear Mike Keller,
Thanks for letting us know.
Best regards,
Oliver Dashbach

Dr. Oliver Dashbach,
Professor and Chair
Department of Mathematics
Louisiana State University
301-C Lockett Hall
office 225-578-1618
dashbach@math.lsu.edu | www.math.lsu.edu

On Dec 15, 2016, at 2:14 PM, Michael D Kaller <mkalle1@lsu.edu> wrote:

This e-mail is to inform you that MATH 1022 is proposed to be dropped as a general education course from the B.S. in Natural Resource Ecology and Management. MATH 1431 and 1550 were already included in the program, and all students will be directed to these courses. This change may affect as many as 75 students per year.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College

CHEM 1212

Michael D Kaller

Sent: Thu 12/15/2016 2:15 PM
To: Carol M Taylor
Cc: Allen Rutherfo (rutherfo@lsu.edu)

This e-mail is to inform you that CHEM 1212 is being proposed to be dropped as a general education course from the following concentrations in the B.S. in Natural Resource Ecology and Management: Conservation Biology; Fisheries and Aquaculture; Wetland Science; Wildlife Ecology. CHEM 1212 will remain in the B.S. in Natural Resource Ecology and Management concentrations: Pre-Veterinary Medicine Wildlife and Fisheries; Forest Resource Management; Forest Enterprise; Wildlife Habitat Concentration and Management. This change will affect under 10 students per year, based on our records.

Mike Kaller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
PRESENT

The Natural Resource Ecology and Management area of concentration in FISHERIES AND AQUACULTURE focuses on the ecology and management of aquatic resources in freshwater and marine ecosystems, as well as the cultivation of economically important species under controlled conditions. With numerous opportunities to gain research experience, students are well prepared to pursue graduate studies or careers in aquatic resource management in private industry, agencies, consulting firms, and aquatic resource advocacy groups. Coursework follows guidelines for professional certification by the American Fisheries Society upon graduation. Many students in this area of concentration will pursue advanced degrees prior to employment.

BASIC SCHOLASTIC EXPECTATIONS.
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study
*Maintain a cumulative and LSU GPA of 2.0
*Maintain a minimum 2.0 in the major field.
*Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.

CRITICAL REQUIREMENTS
Sem 1: MATH 1021
Sem 2: MATH 1022/1431
Sem 3: CHEM 1201
Sem 4: RNR 1010/1070; BIOL 1201
Sem 5: RNR 2101/2001

RECOMMENDED PATH
Semester 1
Critical: MATH 1021.

AGRI 1001 INTR TO AGRICULTURE 1
ENGL 1001 ENGL COMPOSITION 3
MATH 1021 COLLEGE ALGEBRA 3
BIOL 1201 BIOL FOR SCI MAJ I [CHEM 1201] 3
BIOL 1208 BIOL LAB SCI MAJ [CR: BIOL 1201] 1
RNR 1010/1071 INTRO NAT RES ECOL 4
RNR 1002/105 S NAT RESOURCE MGT [CR: RNR 1010/1070] 1

Total Semester Hours: 16

Semester 2
Critical: MATH 1022/1431

CHEM 1201 GEN CHEMISTRY I [CR: MATH 1022/1023/1431/1550/1551] 3
MATH 1022/1431 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] 3
BIOL 1209* 1
GEN. ED. COURSE – HUMANITIES 3
GEN. ED. COURSE – ARTS 2

Total Semester Hours: 16

Semester 3
Critical: CHEM 1201

RNR 2039/2071 INT RNR RESRC PLCY 3
CHEM 1202 GENERAL CHEMISTRY [CHEM 1201] 3
RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] 3
RNR 2102 NAT RES MEASUR & GIS 3
FREE ELECTIVE 3

Total Semester Hours: 16

Semester 4
Critical: RNR 1010/1071; BIOL 1201

ENGL 2000 ENGLISH COMP [ENGL 1001] 3
CMST 2060 PUBLIC SPEAKING 3
SOC 2001/POLI 2051 3
GEN. ED. COURSE – HUMANITIES 3
AREA OF CONCENTRATION COURSES* 5

Total Semester Hours: 17

Semester 5
Critical: RNR 2101/2001

RNR/BIOL 4020/BIOL 4041 4
AGEC 2003/POLI 1001/2053/2057 3
EXST 2201 STATISTICAL ANALYSIS [MATH 1021] 4
AREA OF CONCENTRATION COURSES* 4
FREE ELECTIVES 10

Total Semester Hours: 46

Semester 6

RNR 2039/2071/4093/3105 2-3
RNR 4025 3
AREA OF CONCENTRATION COURSES* 10
FREE ELECTIVES 10

Total Semester Hours: 16

Semester 7

AREA OF CONCENTRATION COURSES* 16

Total Semester Hours: 16

Semester 8

RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 2004] 4
FREE ELECTIVES 12

Total Semester Hours: 12

1 – Students may elect to take BIOL 1202 in place of BIOL 1209.

2 – Students may elect to take MATH 1550/1551 in place of MATH 1431.

3 – Fisheries & Aquaculture areas of concentration courses*: REQUIRED: CHEM 2060/2261/PHYS 2001, BIOL 2051, RNR 2002, 4022, 4023, 4037, 4040, 4061, 4103, 4106, 4107, 4145.*Students take 1 hour of RNR 4061

4 – Students seeking federal employment following graduation should consult their academic advisor about federal requirements for animal and plant taxonomy courses.
The Natural Resource Ecology and Management area of concentration in FISHERIES AND AQUACULTURE focuses on the ecology and management of aquatic resources in freshwater and marine ecosystems, as well as the cultivation of economically important species under controlled conditions. With numerous opportunities to gain research experience, students are well prepared to pursue graduate studies or careers in aquatic resource management in private industry, agencies, consulting firms, and aquatic resource advocacy groups. Coursework follows guidelines for professional certification by the American Fisheries Society upon graduation. Many students in this area of concentration will pursue advanced degrees prior to employment.

**BASIC SCHOLASTIC EXPECTATIONS.**
*Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study*
*Maintain a cumulative and LSU GPA of 2.0*
*Maintain a minimum 2.0 in the major field.
*Students entering the program with 30 or more semester hours will take one additional hour of general electives in place of AGRI 1001.*

**CRITICAL REQUIREMENTS**
- Sem 1: MATH 1021
- Sem 2: MATH 1431
- Sem 3: CHEM 1201
- Sem 4: RNR 1010/1070, BIOL 1201
- Sem 5: RNR 2102/2001

**RECOMMENDED PATH**

**Semester 1**
- Critical: MATH 1021.
- AGRI 1001 INTR TO AGRICULTURE
- ENGL 1001 ENGL COMPOSITION
- MATH 1021 COLLEGE ALGEBRA
- BIOL 1201 BIOL FOR SCI MAJ [CR: BIOL 1201]
- BIOL 1208/1207 BIOL LAB SCI MAJ [CR: BIOL 1201]
- RNR 1010/1071 INTRO NAT RES ECOL

**Total Semester Hours:** 15

**Critical: MATH 1021/1431**
- CHEM 1201/1422 GEN CHEMISTRY I [CR: MATH 1022/1031/1431/1551/1551]
- MATH 1431
- BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201]
- BIOL 1209/1503
- GEN ED COURSE – HUMANITIES
- GEN ED COURSE – ARTS

**Total Semester Hours:** 16

**Semester 3**
- Critical: CHEM 1201
- RNR 2039/2071 INT RNR RESRC PLCY
- CHEM 1202 GENERAL CHEMISTRY [CHEM 1201]
- RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002]
- RNR 2102 NAT RES MEASUR & GIS
- FREE ELECTIVE

**Total Semester Hours:** 16

**Semester 4**
- Critical: RNR 1010/1071; BIOL 1201
- ENGL 2000 ENGLISH COMP [ENGL 1001]
- CMST 2060 PUBLIC SPEAKING
- SOCL 2001/2051
- GEN ED. COURSE – HUMANITIES
- AREA OF CONCENTRATION COURSES
- FREE ELECTIVE

**Total Semester Hours:** 17

**Semester 5**
- RNR/BIOL 4020/BIOL 4041
- ECON 2030/POLI 1001/2053/2057
- EXST 2201 STATISTICAL ANALYSIS [MATH 1021]
- AREA OF CONCENTRATION COURSES
- FREE ELECTIVES

**Total Semester Hours:** 17

**Semester 6**
- RNR 2031/2072/3105
- RNR 4025
- AREA OF CONCENTRATION COURSES
- FREE ELECTIVES

**Total Semester Hours:** 16

**Semester 7**
- AREA OF CONCENTRATION COURSES

**Total Semester Hours:** 16

**Semester 8**
- RNR 4101 NAT RES MGT/POL/HDIM [RNR 2039/2071, 3004]
- FREE ELECTIVES

**Total Semester Hours:** 11

1 – Students may elect to take MATH 1550/1551 in place of MATH 1431.
2 – Fisheries & Aquaculture areas of concentration courses: REQUIRED:
- Students take 1 hour of RNR 4061
3 – Students seeking federal employment following graduation should consult their academic adviser about federal requirements for animal and plant taxonomy courses.
REQUEST FOR ADDING, CHANGING, SUSPENDING OR DROPPING AN UNDERGRADUATE CONCENTRATION

Department: Renewable Natural Resources
College: Agriculture
Name of Concentration: Pre-Veterinary Medicine-Wildlife and Fisheries
Name of Curriculum/Major: Natural Resource Ecology and Management
Type of Degree: B.S.

Date: 5/2/2016

Has this change been discussed with and approved by all departments-colleges affected? Yes ( ) No ( ) N/A (X)

ATTACH JUSTIFICATION for all actions: Use separate sheet.
ATTACH RESPONSE from any departments affected [i.e. any department whose course(s) are to be added.]
ATTACH FORM D ADDENDUM for all new concentration or changes involving General Education courses.

ACTION (check appropriate box):

( ) ADDING: The entire new concentration, by semester, must be typed on plain sheets and attached to Form E. (See sample layout attached.)

( X ) CHANGING: Regardless if all semesters of a concentration are to be changed or only parts, the present and proposed (eight-semester) recommended path should be attached on separate pages. On the Present recommended path, use strikeout and on the Proposed recommended path, highlight areas to identify deletions and additions. Do not use boldface to designate changes as boldface is reserved for critical requirements within the recommended path. Explain all changes adequately on attachment.

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<td>Total semester hours in current concentration: 18-22</td>
<td>Total semester hours in proposed concentration: 27-29</td>
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APPROVALS:

Department Faculty Approval Date: 5/2/2016

D. Ann Grafton 11 Oct 16

Department Chair's Signature: (Date)

Chair, FS C & C Committee: (Date)

College Faculty Approval Date: 10/27/16

William B. Richardson 10/27/16

College Dean's Signature: (Date)

Academic Affairs Approval: 3/5/16

Contact E-mail: jshen@jvc.edu
# GENERAL EDUCATION REQUIREMENTS

When a department adds a new curriculum or makes changes in an existing one, a Form D Addendum must also be submitted. This form is simply a list of those courses in the curriculum that satisfy the General Education requirement. Include course rubric, number, and credit hours when curricula differ from the default values. Indicate the curriculum semester for all General Education courses.

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<td>(x) 4th ( ) 8th</td>
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<tr>
<td>Analytical Reasoning (6 hrs.)</td>
<td>MATH 1021</td>
<td>3</td>
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<td>(At least 3 hours credit must be from a MATH course.)</td>
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<td>MATH 1550</td>
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<td>Arts</td>
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<tr>
<td>Humanities (9 hrs.)</td>
<td>CMST 2060</td>
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<td>(x) 4th ( ) 8th</td>
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<tr>
<td>Natural Sciences (9 hrs.)</td>
<td>BIOL 1201, 1202</td>
<td>6</td>
<td>(x) 1st ( ) 5th</td>
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<td>(If 2 course sequence is taken in the physical sciences, the additional 3 hour course must be from the life sciences, and vice versa.)</td>
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<td>(x) 2nd ( ) 6th</td>
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<td>(x) 4th ( ) 8th</td>
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<tr>
<td>Social Sciences (6 hrs.)</td>
<td>ECON 2030/POLI 1001/2053/2057</td>
<td>3</td>
<td>(x) 1st ( ) 5th</td>
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<td>(At least three hours at the 2000-level.)</td>
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<td>SOCL 2001/POLI 2051</td>
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SUMMARY OF CHANGES:
This proposal aligns the Pre-Veterinary Medicine- Wildlife and Fisheries Area of Concentration (AOC) with the Wildlife Ecology AOC such that students not accepted to the LSU School of Veterinary Medicine after the third year can seamlessly graduate with a Wildlife Ecology AOC after the 4th year. The Wildlife Ecology AOC is the most common AOC selected by students who are not accepted.

JUSTIFICATION: The availability of the Pre-Veterinary Medicine-Wildlife and Fisheries AOC to 1st year students presents the disingenuous perception that many students successfully complete the "3+1" program, thus, students do not prepare for a 4th, 5th, or 6th year that may be required to complete a B.S. (e.g., students use electives to complete companion animal courses, instead of pre-requisites for 4000 level RNR courses). Based on records from academic years 2010-2015, only 1% of students declaring the Pre-Veterinary Medicine-Wildlife and Fisheries AOC during their first year are accepted to a school of veterinary medicine at any time in the future. Moreover, less than 1% of students declaring the Pre-Veterinary Medicine-Wildlife and Fisheries AOC during their first year are accepted to the LSU School of Veterinary Medicine after the 3rd year. Although 7 of 11 students placed into a school of veterinary medicine during this time period were placed after the 3rd year in the Pre-Veterinary Medicine-Wildlife and Fisheries AOC, this represents 7 of 248 graduates. Although placement of students who enrolled during 2011-2013 has increased (8%; 7 of 94 potential applicants), the remaining ~ 90% are not being placed. Thus, the reality is that successful placement is very low compared with placement to science-based graduate school (~17%) and is similar to law school placement (~6%), which has no specific concentration. Students who are not placed in the LSU School of Veterinary must switch to another 4-year AOC. These students often require 3 or more semesters to complete the new AOC, resulting in a 5th or 6th year graduation.

Students do not need to complete a degree to be accepted to a veterinary medicine program. Moreover, recipients of the Doctor of Veterinary Medicine can practice without holding a B.S. degree. Consequently, any student meeting the requirements of a veterinary medicine program can leave their undergraduate program and begin the study of veterinary medicine following acceptance. Therefore, the existence of this whole AOC is not needed to provide a path to the study of veterinary medicine and is offered as a convenience to students intending to pursue their degrees at the LSU School of Veterinary Medicine. Based on statistics reported herein, assessment data, and repeated votes at faculty meetings, the faculty would prefer to: 1) eliminate a three year Pre-Veterinary Medicine-Wildlife and Fisheries AOC entirely replacing with a planned 4-year program of study; or 2) implement a restructured Pre-Veterinary Medicine-Wildlife and Fisheries AOC with a barrier-to-entry model (i.e., must meet some minimum qualification associated with successful placement into veterinary school in 3 years, like an ACT above 23 or a greater than 3.0 GPA at the end of the 1st year, which is highly correlated with acceptance to veterinary programs according to the LSU School of Veterinary Medicine) and/or with a GPA check. Without these measures, the realignment with Wildlife Ecology AOC presents the best option to prevent 5th and 6th year graduation.

Summary of credit hour changes:

<table>
<thead>
<tr>
<th>Courses added</th>
<th>MATH 1550; RNR 2001/RNR 4020/BIOL 4020; RNR 3018</th>
<th>11-13 cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses options added that did not affect credit hours:</td>
<td>BIOL 1207 (Honors); CHEM 1422 (Honors); BIOL 1503 (Honors); CHEM 1431 (Honors); ECON 2030; RNR 2070 (Honors)</td>
<td>No change</td>
</tr>
<tr>
<td>Courses options removed that did not affect credit hours:</td>
<td>AGRO 2051/RNR 4025/4900/4033</td>
<td>No change</td>
</tr>
<tr>
<td>Courses removed:</td>
<td>MATH 1022; RNR 1002;</td>
<td>4 cr.</td>
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<tr>
<td>Net concentration change:</td>
<td></td>
<td>7-9 cr.</td>
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</tbody>
</table>
This e-mail is to inform you that CHEM 1212 is being proposed to be dropped as a general education course from the following concentrations in the B.S. in Natural Resource Ecology and Management: Conservation Biology; Fisheries and Aquaculture; Wetland Science; Wildlife Ecology. CHEM 1212 will remain in the B.S. in Natural Resource Ecology and Management concentrations: Pre-Veterinary Medicine Wildlife and Fisheries; Forest Resource Management; Forest Enterprise; Wildlife Habitat Concentration and Management. This change will affect under 10 students per year, based on our records.

Mike Keller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College

MATH 1022

Dear Mike Keller,
Thanks for letting us know.
Best regards,
Oliver Dasbach

Dr. Oliver Dasbach,
Professor and Chair
Department of Mathematics
Louisiana State University
301-C Lockett Hall
office 225-578-1618
dasbach@math.lsu.edu | www.math.lsu.edu

On Dec 15, 2016, at 2:14 PM, Michael D Keller <mkalle1@lsu.edu> wrote:

This e-mail is to inform you that MATH 1022 is proposed to be dropped as a general education course from the B.S. in Natural Resource Ecology and Management. MATH 1431 and 1550 were already included in the program, and all students will be directed to these courses. This change may affect as many as 75 students per year.

Mike Keller, Ph.D.
Associate Professor and
Curriculum Coordinator,
School of Renewable Natural Resources,
Louisiana State University
Associate Rector,
Agriculture Residence College
PROPOSED

The BACHELOR OF SCIENCE in NATURAL RESOURCES ECOLOGY & MANAGEMENT provides a broad education in renewable natural resources specifically related to forested, wetland, and coastal ecosystems. Students preparing to enter the LSU School of Veterinary Medicine may enroll in the "three-plus-one" program managed jointly by the School of Renewable Natural Resources and the LSU School of Veterinary Medicine. In this program, students spend three years in the pre-veterinary medicine area of concentration, after which they are eligible to apply for admission to the LSU School of Veterinary Medicine. The required first-year veterinary medicine courses will be used to satisfy the fourth year of the BS degree. This program only applies to the LSU School of Veterinary Medicine. Other Veterinary Medicine schools have other requirements, and students, not academic advisors, are responsible for learning the requirements of other Veterinary Medicine schools. Students are highly encouraged to research these requirements and discuss their options with their academic advisor.

Acceptance to the LSU School of Veterinary Medicine is highly selective and very few students are accepted after their 3rd year. Students may be accepted to LSU School of Veterinary Medicine from other Areas of Concentration in the B.S. in Natural Resources Ecology and Management if all LSU School of Veterinary Medicine required coursework is completed. Students are highly encouraged to discuss with their academic advisor whether a 4-year curriculum is a better fit for their career interests and progress toward eligibility for acceptance into the LSU School of Veterinary Medicine.

BASIC SCHOLASTIC EXPECTATIONS
* Complete English 1001 and one General Education Analytical Reasoning course within the first 30 hours of study.
* Maintain a cumulative and LSU GPA of 2.0.
* Maintain a minimum 2.0 GPA in the major field.
* Students entering the program with 30 or more semester hours will take one additional hour of approved electives in place of AGRI 1001.

* CRITICAL REQUIREMENTS

<table>
<thead>
<tr>
<th>SEMESTER 1: MATH 1021</th>
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<tr>
<td>SEMESTER 2: CHEM 1201/1422</td>
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<tr>
<td>SEMESTER 3: MATH 1550</td>
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<td>SEMESTER 4: RNR 1010/1071; BIOL 1201</td>
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<tr>
<td>SEMESTER 5: RNR 2101/2001</td>
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</table>

*RECOMMENDED PATH

* Semester 1
  Critical: MATH 1021
  - AGRI 1001 INTRO TO AGRICULTURE...
  - ENGL 1001 ENGLISH COMPOSITION
  - MATH 1021 COLLEGE ALGEBRA
  - BIOL 1201 BIOL FOR SCI MAJ I
  - BIOL 1208/1207 BIOL LAB SCI MAJ I [CR: BIOL 1207]
  - RNR 1010/1071 INTRO NAT RES ECOL

  Total Semester Hours: 15

* Semester 2
  Critical: CHEM 1201 / CHEM 1422
  - CHEM 1201/1422 GEN CHEMISTRY I
  - MATH 1550
  - BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201]
  - BIOL 1209/1203 BIOL LAB SCI MAJ II [BIOL 1209/1203]
  - GEN. ED. COURSE - HUMANITIES
  - GEN. ED. COURSE - ARTS

  Total Semester Hours: 18

* Semester 3
  CRITICAL: MATH 1550
  - CHEM 1202/1422 GENERAL CHEMISTRY [CHEM 1201/1421] 3
  - CHEM 1212/1431 GEN CHEM LAB [CR: CHEM 1202/1422] 2
  - PHYS 2001 GENERAL PHYSICS [MATH 1220/1223/1550/1551] 3
  - RNR 2001/RNR 4020/BIOL 4041 2
  - RNR 2101/2070 ECOL RENEW NAT RES [BIOL 1201, 1209/1203, RNR 1010/1071, 1002] 3
  - RNR 2102 NAT RES MEASUR & GIS

  Total Semester Hours: 16-18

* Semester 4
  Critical: RNR 1010/1071; BIOL 1201
  - ENGL 2000 ENGLISH COMP [ENGL 1001] 3
  - MATH 2060 PUBLIC SPEAKING
  - RNR 2031/2072 PRINC WILDLIFE MGMT [CR: RNR 2101/2070] 3
  - SOC 2001/POLI 2051
  - GEN. ED. COURSE - HUMANITIES

  Total Semester Hours: 18

* Semester 5
  Critical: RNR 2101/2001
  APPLICATIONS FOR LSU SCHOOL OF VETERINARY MEDICINE ARE DUE DURING THE 5TH SEMESTER. STUDENTS NOT MEETING RECOMMENDED ELIGIBILITY GUIDELINES SHOULD SEE THEIR ACADEMIC ADVISER TO SELECT A 4-YEAR CURRICULUM.
  - CHEM 2060/2261
  - ECON 2030/POLI 1001/2051/2053/2057
  - EXST 2201 STATISTICAL ANALYSIS [MATH 1021]
  - BIOL 2051 GEN MICROBIO [BIOL 1202, 1209, CHEM 1202]

  Total Semester Hours: 14

* Semester 6
  STUDENTS ACCEPTED TO THE LSU SCHOOL OF VETERINARY MEDICINE FOLLOWING THE 6TH SEMESTER WILL COMPLETE SEMESTERS 7 AND 8 AT THE LSU SCHOOL OF VETERINARY MEDICINE.
  STUDENTS NOT ACCEPTED TO THE LSU SCHOOL OF VETERINARY MEDICINE MUST LEAVE THE PRE-VETERINARY MEDICINE AREA OF CONCENTRATION AND MUST SELECT A 4-YEAR CURRICULUM.
  - RNR 4013 CONSERVATION GENETIC [BIOL 1201, 1202]
  - RNR 3105
  - RNR 3004
  - BIOL 2083/4087
  - RNR 3018 [CR: RNR 2031/2072]

  Total Semester Hours: 15-16
PRESENT

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* Maintain a cumulative and LSU GPA of 2.0.
* Maintain a minimum 2.0 GPA in the major field.
* Students entering the program with 30 more semester hours will take the additional hour of approved electives in place of AGRI 1001.

CRITICAL REQUIREMENTS

SEMESTER 1: MATH 1021

SEMESTER 2: CHEM 1201

SEMESTER 3: MATH 1402/1432

SEMESTER 4: RNR 1010/1071; BIOL 1201

SEMESTER 5: RNR 2101/2001

RECOMMENDED PATH

Semester 1
Critical: MATH 1021

AGRI 1001 INTRO TO AGRICULTURE.................. 1
ENGL 1001 ENGL COMPOSITION .................. 3
MATH 1021 COLLEGE ALGEBRA .................. 3
BIOL 1201 BIOL FOR SCI MAJ I ............. 3
BIOL 1208 BIOL LAB SCI MAJ I [CR: BIOL 1201] ........ 1
RNR 1010/1071 INTRO NAT RES ECOL .......... 4
RNR 1010/1071 INTRO NAT RESOURCE MGT [CR: RNR 1010/1071] ........ 4

Total Semester Hours: 46

Semester 2
Critical: CHEM 1201

CHEM 1201 GEN CHEMISTRY I .................. 3
[CR: MATH 1022/1023/1431/1550/1551]...... 3
MATH 4024/4441 .................................... 3
BIOL 1202 BIOL FOR SCI MAJ II [BIOL 1201] ....... 3
BIOL 1209 BIOL LAB SCI MAJ II [BIOL 1208] [CR: BIOL 1202]............ 1
GEN. ED. COURSE - HUMANITIES ............. 3
GEN. ED. COURSE - ARTS .................. 3

Total Semester Hours: 46

Semester 3

CRITICAL: MATH 1022/1432

CHEM 1202 GENERAL CHEMISTRY [CHEM 1201/1421] .................. 3
CHEM 1212 GEN CHEM LAB [CR: CHEM 1202/1422] ............. 2
PHYS 2001 GENERAL PHYSICS [MATH 1022/1023/1550/1551] .... 3
RNR 2031 PRINC WLDLFE MGMT [CR: RNR 2101/2070] .......... 3
RNR 2101 ECOL RENEW NAT RES [BIOL 1202, 1209, RNR 1010/1071, 1002] .......... 3
RNR 2102 NAT RES MEASUR & GIS ................ 3

Total Semester Hours: 42

Semester 4

Critical: RNR 1010/1071; BIOL 1201

ENGL 2000 ENGLISH COMP [ENGL 1001] .......... 3
CMST 2000 PUBLIC SPEAKING .................. 3
RNR 2004 INT RNR RESC PLCY ................. 3
SOC 2001/PSY 2051 .................. 3
GEN. ED. COURSE - HUMANITIES ............. 1

Total Semester Hours: 16

Semester 5

Critical: RNR 2101/2001

APPLICATIONS FOR LSU SCHOOL OF VETERINARY MEDICINE ARE DUE DURING THE 5TH SEMESTER. STUDENTS NOT MEETING RECOMMENDED ELIGIBILITY GUIDELINES SHOULD SEE THEIR ACADEMIC ADVISER TO SELECT A 4-YEAR CURRICULUM.

CHEM 2060/2261 ............................................ 3
RNR 2001/RNR 4020/BIOL 4041 .................. 2
AGRIC 2001/PSY 1001/2051/2053/2057 .......... 4
EXST 2101 STATISTICAL ANALYSIS [MATH 1021] ............. 4
BIOL 2051 GEN MICROBIO [BIOL 1202, 1209, CHEM 1201] ............ 4

Total Semester Hours: 46-48

Semester 6

STUDENTS ACCEPTED TO THE LSU SCHOOL OF VETERINARY MEDICINE FOLLOWING THE 6TH SEMESTER WILL COMPLETE SEMESTERS 7 AND 8 AT THE LSU SCHOOL OF VETERINARY MEDICINE.

STUDENTS NOT ACCEPTED TO THE LSU SCHOOL OF VETERINARY MEDICINE MUST LEAVE THE PRE-VETERINARY MEDICINE AREA OF CONCENTRATION AND MUST SELECT A 4-YEAR CURRICULUM.

RNR 4103 CONSERVATION GENETIC [BIOL 1201, 1202] .................. 3
RNR 3002/3103 .................. 2
AGRO 2051/RNR 4025/4000/4033/3004 ............ 3
BIOL 2083/4087 .................. 3
FREE ELECTIVE .................. 4

Total Semester Hours: 13

*Calculation is required by many graduate schools
**REQUEST FOR ADDITION OF NEW COURSE**

**Department** | Renewable Natural Resources  | **College** | Agriculture  
--- | --- | --- | ---
**Date** | 05/02/2016  

**PROPOSED COURSE DESCRIPTION**

| Rubric & No. | RNR 4140 | Title | Wildlife and Fisheries Ecotoxicology  
--- | --- | --- | ---

**Short Title (≤ 19 characters)** | W I L D | F I S H | E C O T O X  
--- | --- | --- | ---

**Semester Hours of Credit** | 4  
--- | ---

**If combination course type, # hrs. of credit for** | Lecture: 3 | Lab/Sem/Rec: 1  
--- | --- | ---

**Repeat Credit Max. (if repeatable):** | credit hours | Graduate Credit? | Yes | No  
--- | --- | --- | --- | ---

**Credit will not be given for this course and:**  

**Course Type (Indicate hours in the appropriate course type):**  

| Lecture | Lab : | Seminar | Recitation | Lec/Rec | Lec/Sem | Lec/Lab | Res/Ind | Clin/Pract  
--- | --- | --- | --- | --- | --- | --- | --- | ---

**Maximum enrollment per section: (use integer, e.g. 25 not 20-30)** | 25  
--- | ---

**Grading System:** | Letter Grade | X | Pass/Fail | Final Exam:** | Yes | X | No  
--- | --- | --- | --- | --- | --- | ---

**Course Description:**  
(Concisely catalog statement exactly as you wish it to appear in the General Catalog)  

4140 Wildlife and Fisheries Ecotoxicology (4). Also offered as ENVS 4140. 3 hrs. lecture; 3 hrs. lab. Provides students with an overview of ecological and biological aspects of toxicity. Emphasizes the biochemical and physiological effects of pollutants on animals, effects on wildlife and fisheries population dynamics, modeling, as well as, techniques applied in wildlife and fisheries toxicity studies.

**BUDGET IMPACT (IF ANSWER TO ANY QUESTION IS "YES", ATTACH EXPLANATION).**  

If this course is approved, will additional staff be needed? | Yes | No | X  
--- | --- | --- | ---

Will additional space, equipment, special library materials or other major expense be involved? | Yes | No | X  
--- | --- | --- | ---

Academic Affairs Approval:  
(Date)  

**ATTACHMENTS (ATTACH THE FOLLOWING TO YOUR PROPOSAL)**  

JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?  
SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria  
(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students).

**APPROVALS**  

Department Faculty Approval Date | 05/02/2016  
--- | ---

(College Faculty Approval Date) | 10/27/11  
--- | ---

(Department Chair Signature) | 11 Oct 16  
--- | ---

(Clinic Dean Signature) | 10/28/11  
--- | ---

(Certificate of FS C&C Committee) | 3/8/11  
--- | ---

(Chair, FS C&C Committee) | 3/8/11  
--- | ---

(Academic Affairs Approval) | (Date)  
--- | ---

College Contact: E-mail
JUSTIFICATION:

Increasingly, graduates of the School of Renewable Natural Resources are finding employment with private firms (e.g., environmental engineering and consulting scientific firms) and state and federal agencies (e.g., Louisiana Department of Environmental Quality and U.S. Environmental Protection Agency and U.S. Army Corps of Engineers) where knowledge and skills regarding ecotoxicology are required. Two recent additions to the faculty have brought skill and expertise in this area. Moreover, faculty from the Department of Environmental Science have offered a complementary, but differentially focused courses, ENVS 4477 – Environmental Toxicology and ENVS 4500 – Health Effects of Environmental Pollutants. Discussions with Drs. Kevir Armbrust and Vince Wilson of the Department of Environmental Science indicated that the proposed course would strengthen the overall offering of toxicology at LSU.

The proposed course will be cross-listed with the Department of Environmental Sciences and is expected to attract students from the School of Renewable Natural Resources and Department of Environmental Sciences. Additionally, no specific pre-requisites are required, thus, interested students from the School of Plant, Environmental, and Soil Sciences, Department of Oceanography and Coastal Sciences, and Department of Biological Sciences also could enroll in the course.

CURRICULUM:

At present, the course is not proposed to be included in any specific curriculum.
ENVS/RNR 4140 – Wildlife and Fisheries Ecotoxicology - Spring 2017

Instructor: Dr. Wei Xu
Aquaculture Research Station – 2410 Ben Hur Rd. Rm 104
225-765-0107 / e-mail: wxu@agcenter.lsu.edu

Office Hours:
Meeting Time:

Course Description: The purpose of this class is to provide students with an overview of ecological and biological aspects of toxicology. The course emphasize the biochemical and physiological effects of pollutants on animals, effects on wildlife and fisheries population dynamics, modeling, as well as, techniques applied in wildlife and fisheries toxicology studies. In lab sections, students will have opportunities to get hands on training in toxicology related experimental assays, such as experimental design, sampling, tissue process, data analyses.

Objectives: To expose students to basic concepts in ecotoxicology and help them learn basic research methods in toxicology.

Evaluation Procedures:
Lecture Exams: 2 Lecture Tests @ 100 points each 200 (33.3% total)
Quizzes: 5 total @ 20 points each 100 (16.7% total)
Experiment report: @ 100 points 100 (16.7%)
Final Exam: @ 200 points 200 (33.3%)

600 total points

Grades: A+ (≥94.0%, 4.3), A (90.0-93.9%, 4.0), A- (87.0-89.9%, 3.7), B+ (84.0-86.9%, 3.3), B (80-83.9%, 3.0), B- (77-79.9%, 2.7), C+ (74-76.9, 2.3), C (70.0-73.9%, 2.0), C- (67-69.9%, 1.7), D+ (64-66.9%, 1.3), D (60.0-63.9 %), D- (55-60%, 1), and F(≤54.9%, 0).

Final Exam: The final exam is comprehensive, but will concentrate on materials after the second lecture test.

Quizzes: This class will have a series of book based quizzes throughout the course. Each quiz will be taken at the beginning of class and are 20 points each. There will be 5 Quizzes during this course.

UNIVERSITY POLICY STATEMENTS
Attendance: LSU policy statements 22 and 24 and Faculty Senate resolution 12-3 describe excused and unexcused absences and that attendance can be graded by randomly taking attendance during 12 randomly selected lectures. An unexcused absence during any graded activity will result in a 0 for the activity. Excused absences and make-up opportunities will be granted for university-approved off-campus activities, religious holidays, professional development activities, job interviews, and severe illnesses. Please contact me before course activities if possible to schedule a make-up.

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Credit expectations: For each earned credit, students must spend a minimum of 1 hour per week in lecture class or 3 hours per week in lab, and a minimum of 8 hours per week of studying/homework outside of class.

<table>
<thead>
<tr>
<th>Wildlife and Fisheries Ecotoxicology (Lectures)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week</strong></td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>2</td>
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<tr>
<td>5</td>
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<tr>
<td><strong>1st exam</strong></td>
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<tr>
<td>6</td>
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<td>6</td>
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<tr>
<td>Week</td>
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<td>7</td>
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<tr>
<td>15</td>
</tr>
<tr>
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</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

**Wildlife and Fisheries Ecotoxicology Lab Goals**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preparing an IACUC protocol</td>
<td>Familiarize the purpose, preparation, and process of IACUC animal protocols</td>
</tr>
<tr>
<td>2</td>
<td>Maintain for experimental animals</td>
<td>Learn how to collect, maintain, and handle the experimental animals</td>
</tr>
<tr>
<td>3</td>
<td>Lab notebook record</td>
<td>Learn how to keep a record for experiment progress in lab notebook</td>
</tr>
<tr>
<td>4</td>
<td>Measurement of biomarkers</td>
<td>Learn the basic procedures to measure the biomarkers for toxicology studies</td>
</tr>
<tr>
<td>5-7</td>
<td>Techniques in sample processing</td>
<td>Basic lab techniques such as cell counting, pipetting, bacterial culture, histological slides preparation, etc.</td>
</tr>
<tr>
<td>8-10</td>
<td>Software for data analyses</td>
<td>Learn how to use some common software and website for data analyses, such as ImageJ, SAS, GenBank database, etc.</td>
</tr>
<tr>
<td>11</td>
<td>Modeling</td>
<td>Students will utilize computer lab to learn how to use SAS to for model analyses.</td>
</tr>
<tr>
<td>12-14</td>
<td>Experiment with crayfish</td>
<td>Using crayfish as a model, students will learn how to perform a toxicological study for certain pollutants in laboratory conditions. Students will design the experiment, apply treatments, maintain crayfish in the lab, collect tissues, process samples, analyze the results, and write reports with the data.</td>
</tr>
<tr>
<td>15</td>
<td>Final experiment report due</td>
<td></td>
</tr>
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</table>
REQUEST FOR **ADDITION** OF NEW COURSE

**PROPOSED COURSE DESCRIPTION**

<table>
<thead>
<tr>
<th>Rubric &amp; No.</th>
<th>Title</th>
<th>Introductory Wildlife Population Dynamics</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNR 4913</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Short Title (≤ 19 characters) | INT WILD POP DYNAM |
Semester Hours of Credit | 3 |
If combination course type, # hrs. of credit for Lecture: 0 | Lab/Sem/Rec: 1 |
Repeat Credit Max. (if repeatable): credit hours Graduate Credit? Yes |
Credit will not be given for this course and: |
Course Type (Indicate hours in the appropriate course type.) Lecture Lab Seminar Recitation Lec/Rec Lec/Sem Lec/Lab Res/Ind Clin/Pract |
Maximum enrollment per section: (use integer, e.g. 25 not 20-30) 25 |
Grading System: Letter Grade X Pass/Fail Final Exam: Yes |

**(Attach justification if the proposed course will not hold a final exam during examination week.**

**Course Description:**

(Concise catalog statement exactly as you wish it to appear in the General Catalog)

**4913 Introductory Wildlife Population Dynamics (3)** Prereq.: MATH 1431/1550; credit or enrollment in RNR 4011. 2 hrs. lecture; 3 hrs. lab. Introduction to theories of population growth and regulation, population interaction, life tables, mortality rate calculation; band data analysis; population modeling. **Not for graduate credit**

**BUDGET IMPACT (IF ANSWER TO ANY QUESTION IS "YES", ATTACH EXPLANATION).**

| If this course is approved, will additional staff be needed? | Yes | No X |
| Will additional space, equipment, special library materials or other major expense be involved? | Yes | No X |

Academic Affairs Approval: (Date)

**ATTACHMENTS (ATTACH THE FOLLOWING TO YOUR PROPOSAL)**

JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?
SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria
(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students).

**APPROVALS**

| Department Faculty Approval Date | 05/02/2016 | College Faculty Approval Date | 10/3/2016 |

Department Chair Signature [D. Allen] 11 Oct 16 (date)

Graduate Dean Signature (date)
JUSTIFICATION:

A similar course exists at the graduate level. The proposed course will make available a section for undergraduates. A consistent feedback item from employers (e.g., Louisiana Departments of Wildlife and Fisheries, Natural Resources, and Environmental Quality; U.S. Fish and Wildlife Service) and graduate programs that accept LSU graduates is the perceived deficiencies in quantitative skills and experiences. Although undergraduates complete MATH 1021, MATH 1022/1431/1550 (only 1431/1550 in the future), EXST 2201, and an internal skills course, RNR 2102, the lack of course content in the upper level results in students who have not used these skills for several years and do not have advanced understanding of applications. Many similar programs at other universities offer an undergraduate version of Wildlife Population Dynamics (e.g., Auburn University, Cornell University, Clemson University, Colorado State University, Oklahoma State University, Oregon State University, Michigan State University, Pennsylvania State University, Texas A&M University, Texas Tech University, University of Arkansas-Monticello, University of California-Davis, University of Idaho, University of Maine, University of Montana, and West Virginia University). Lack of this content at the undergraduate level puts B.S. level graduates at a competitive disadvantage for employment and graduate study.

CURRICULUM:

This proposed course would be included in the B.S. in Natural Resources Ecology and Management Areas of Concentration in Wildlife Ecology.
JUSTIFICATION:

A similar course exists at the graduate level. The graduate and undergraduate courses will not be offered in the same semester. Because of limited faculty time, courses will be alternated in an even/odd year pattern, similar to the current practice of offering RNR 4013 in even falls and RNR 7017 in odd falls.

The proposed course will make available a section for undergraduates. A consistent feedback item from employers (e.g., Louisiana Departments of Wildlife and Fisheries, Natural Resources, and Environmental Quality; U.S. Fish and Wildlife Service) and graduate programs that accept LSU graduates is the perceived deficiencies in quantitative skills and experiences. Although undergraduates complete MATH 1021, MATH 1022/1431/1550 (only 1431/1550 in the future), EXST 2201, and an internal skills course, RNR 2102, the lack of course content in the upper level results in students who have not used these skills for several years and do not have advanced understanding of applications. Many similar programs at other universities offer an undergraduate version of Wildlife Population Dynamics (e.g., Auburn University, Cornell University, Clemson University, Colorado State University, Oklahoma State University, Oregon State University, Michigan State University, Pennsylvania State University, Texas A&M University, Texas Tech University, University of Arkansas-Monticello, University of California-Davis, University of Idaho, University of Maine, University of Montana, and West Virginia University). Lack of this content at the undergraduate level puts B.S. level graduates at a competitive disadvantage for employment and graduate study.

CURRICULUM:

This proposed course would be included in the B.S. in Natural Resources Ecology and Management Areas of Concentration in Wildlife Ecology.
**Introductory Wildlife Population Dynamics**

**RNR 4913 (3 cr.): Fall 2017**  
**Lecture: Mon/Wed 1:30-2:30, RNR 214**  
**Lab: Wednesday 2:30-5:30**

**INSTRUCTORS:**  
Dr. Bret Collier  
Office: 341A RNR  
Office Hours: M/W/F after class, or by appointment  
Email: bcollier@agcenter.lsu.edu (best method)  
Office Phone: 225-578-4192

**MOODLE:** TBA

**COURSE DESCRIPTION AND GOALS**  
Introductory Wildlife Population Dynamics is focused on providing students with a fundamental understanding of the scientific philosophy, statistical theory, biological application and interpretation of applied quantitative methods used for wildlife population demography. We will discuss and apply:

- Philosophy of science/scientific process
- Inferential theory in population dynamics
- Detectability in population dynamics research
- Study Design

**LECTURE AND LAB**  
Lectures will take place M/W in RNR 214. Lectures will focus on providing you with a background in wildlife population dynamics theory and practice.

Labs will take place in RNR 214 unless otherwise stated. We will designate several lab periods as data analysis "workshops" where you will work through exercises in small groups. In general, labs will last the full period, so please plan your schedules accordingly.

**READINGS:**  
- Readings will be assigned

**GRADING:**  
RNR 4913 is graded course. Official test dates will be announced in class a minimum of 3 class periods prior to the examination, but I expect the first exam to occur during mid-October 2017, the 2nd exam to occur during late-November 2017 and the final examination being during the scheduled course meeting time in finals week. The mid-term exam will constitute 25% of your course grade, the laboratory example will constitute 25% of your course grade, and the final will constitute 50% of your course grade.

Following the table below, your grade will not be less than these ranges (i.e., a 90% will never be less than A-).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.3 Qpts</td>
</tr>
<tr>
<td>A</td>
<td>4.0 Qpts</td>
</tr>
<tr>
<td>A-</td>
<td>3.7 Qpts</td>
</tr>
<tr>
<td>B+</td>
<td>3.3 Qpts</td>
</tr>
<tr>
<td>B</td>
<td>3.0 Qpts</td>
</tr>
<tr>
<td>B-</td>
<td>2.7 Qpts</td>
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</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>C+</td>
<td>2.3 Qpts</td>
</tr>
<tr>
<td>C</td>
<td>2.0 Qpts</td>
</tr>
<tr>
<td>C-</td>
<td>1.7 Qpts</td>
</tr>
<tr>
<td>D+</td>
<td>1.3 Qpts</td>
</tr>
<tr>
<td>D</td>
<td>1.0 Qpts</td>
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<tr>
<td>D-</td>
<td>0.7 Qpts</td>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>F</td>
<td>&lt; 60.0</td>
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Grading:
- Exams (2@ 12.5 pts) plus midterm (1@25)  
- Final exam  
- Total

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>50</td>
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<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>100</td>
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</table>

**Re-grades:** Must be submitted directly to Dr. Collier, in person, within one week after exams are returned. The entire test will be re-graded; that is, there is the potential to both gain and lose points. Do not change your answers and ask for a re-grade.
**Participation:** Enthusiastic participation in lecture and lab is crucial, especially when we are hosting guest speakers. Attendance is obviously a prerequisite for participation. Guidelines for evaluating participation are as follows:

- **Excellent (40 points):** The student comes well-prepared, and always engages with the lecturer and other students in a constructive, positive manner. The student goes out of his/her way to ask questions and offer insightful commentary, and tends to lead classes in discussion.
- **Good (30 points):** The student is generally well-prepared, and often offers substantial commentary and questions. The student is an active participant in group discussions.
- **Satisfactory (20 points):** The student sometimes is well-prepared, and occasionally asks questions. The student participates in discussions when prodded.
- **Non-participant (10 points):** The student is rarely prepared for lecture, and rarely or ask questions or offers commentary. The student is disengaged from lecture and lab.
- **Negative participant (0 points):** The student is unprepared for lecture and lab, and wastes valuable time asking irrelevant questions or forcing the entire group to play catch-up.

**CLASSROOM RESPECT**
- Class will begin on time. Please show up on time.
- Do not use your cell phones in class.
- Please stay focused in lecture. Most people cannot use their laptops and remain focused; if you use a laptop, it must have a privacy screen to avoid distracting other students.

**UNIVERSITY POLICY STATEMENTS**

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**SAMPLE SCHEDULE**

<table>
<thead>
<tr>
<th>Day</th>
<th>Week</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>Mon.</td>
<td>1</td>
<td>Sampling and Evidence</td>
<td>Introduction to R</td>
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<tr>
<td>Wed.</td>
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<td>Evidence and Models</td>
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</tr>
<tr>
<td>Mon.</td>
<td>2</td>
<td>Exponential (Geometric) growth</td>
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<tr>
<td>------</td>
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<td>-------------------------------</td>
<td>-------------------------------</td>
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<tr>
<td>Wed.</td>
<td></td>
<td>Exponential (Geometric) growth</td>
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<td>Mon.</td>
<td>3</td>
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<td>Wed.</td>
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<td>Mon.</td>
<td>4</td>
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<tr>
<td>Wed.</td>
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<td>Open vs closed populations</td>
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<tr>
<td>Mon.</td>
<td>5</td>
<td>Population parameters – Birth rates, fecundity, nest success</td>
<td>Population parameters – Birth rates, fecundity, nest success</td>
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<tr>
<td>Wed.</td>
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<td>Population parameters – Birth rates, fecundity, nest success</td>
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<tr>
<td>Mon.</td>
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<td>Population parameters – Birth rates, fecundity, nest success</td>
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<td>Mon.</td>
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<td>Mon.</td>
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<td>Wed.</td>
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<td>MIDTERM EXAM</td>
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<td>Population parameters – Movement</td>
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<td>Wed.</td>
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<td>Population parameters – Movement</td>
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<td>Mon.</td>
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<td>Sampling Methods for Populations</td>
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<td>Wed.</td>
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<td>Mon.</td>
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<tr>
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</tr>
<tr>
<td>Mon.</td>
<td>14</td>
<td>Special Considerations of Exploited and Small Populations</td>
<td>Special Considerations of Exploited and Small Populations</td>
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REQUEST FOR ADDITION OF NEW COURSE

PROPOSED COURSE DESCRIPTION

<table>
<thead>
<tr>
<th>Rubric &amp; No.</th>
<th>RNR 4016</th>
<th>Title</th>
<th>Upland Game Bird Biology</th>
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<tbody>
<tr>
<td>Short Title (≤ 19 characters)</td>
<td>U P L A N D B I R D B I O L O G Y</td>
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<tr>
<td>Semester Hours of Credit</td>
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<tr>
<td>Lecture: 3</td>
<td>Lab/Sem/Rec: 1</td>
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<tr>
<td>Repeat Credit Max. (If repeatable):</td>
<td>credit hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Credit?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit will not be given for this course and:</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Type (Indicate hours in the appropriate course type.)</td>
<td></td>
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</tr>
<tr>
<td>Lecture</td>
<td>Lab</td>
<td>Seminar</td>
<td>Recitation</td>
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<tr>
<td>3/3</td>
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<tr>
<td>Maximum enrollment per section: (use integer, e.g. 25 not 20-30)</td>
<td>25</td>
<td></td>
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<tr>
<td>Grading System:</td>
<td>Letter Grade</td>
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<tr>
<td>Pass/Fail</td>
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<td></td>
<td></td>
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<tr>
<td>Final Exam:**</td>
<td>Yes</td>
<td></td>
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<tr>
<td><strong>(Attach justification if the proposed course will not hold a final exam during examination week.)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Course Description:
Concise catalog statement exactly as you wish it to appear in the General Catalog.

4016 Upland Game Bird Biology (4) Prereq.: RNR 3018. Students are responsible for paying for travel expenses associated with this course. 3 hrs. lecture; 3 hrs. lab. Biology, ecology, conservation, and management of selected upland birds found in North America. Not for graduate credit.

BUDGET IMPACT (IF ANSWER TO ANY QUESTION IS "YES", ATTACH EXPLANATION.)

If this course is approved, will additional staff be needed? Yes No X

Will additional space, equipment, special library materials or other major expense be involved? Yes No X

Academic Affairs Approval: (Date)

ATTACHMENTS (ATTACH THE FOLLOWING TO YOUR PROPOSAL)

JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?
SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria
(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students.)

APPROVALS

Department Faculty Approval Date 05/02/2016 College Faculty Approval Date 10/27/16

D. Ann Fortzfeldt
Department Chair Signature (date)

Jennifer Neal
Graduate Dean Signature (date)

William B. Richardson
College Dean Signature (date)

Chair, FS C&O Committee (date)

Academic Affairs Approval (date)
JUSTIFICATION:

A similar course exists at the graduate level. The graduate and undergraduate courses will not be offered in the same semester. Because of limited faculty time, courses will be alternated in an even/odd year pattern, similar to the current practice of offering RNR 4013 in even falls and RNR 7017 in odd falls.

The proposed course will address a need for employer-required and classroom experience with specialized biology and related courses. Undergraduates need at least 9 credit hours in specialized biology courses emphasizing the taxonomy, biology, and ecology of vertebrates and invertebrates to meet eligibility requirements for professional-level employment with state and federal fish and wildlife agencies (e.g., Louisiana Department of Wildlife and Fisheries and U.S. Fish and Wildlife Service). Moreover, these courses also are needed for professional certification by The Wildlife Society and American Fisheries Society. Since academic year 2012-2013, the unmet demand for these courses has climbed to 42% of graduates in the B.S. in Natural Resource Ecology and Management. This course is proposed to, in part, address this need.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number Seats (combined BIOL 4141, 4142, 4145, 4146, and RNR 4145)</th>
<th>Conservation Biology, Wildlife Ecology, and Fisheries and Aquaculture Enrollment*</th>
<th>NREM Graduates (all concentrations)</th>
<th>Proportion of all NREM Graduates Needing Substitutions for Listed Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-2016</td>
<td>73</td>
<td>185</td>
<td>65</td>
<td>42%</td>
</tr>
<tr>
<td>2014-2015</td>
<td>73</td>
<td>156</td>
<td>52</td>
<td>38%</td>
</tr>
<tr>
<td>2013-2014</td>
<td>45</td>
<td>136</td>
<td>43</td>
<td>21%</td>
</tr>
<tr>
<td>2012-2013</td>
<td>73</td>
<td>115</td>
<td>49</td>
<td>18%</td>
</tr>
<tr>
<td>2011-2012</td>
<td>36</td>
<td>101</td>
<td>37</td>
<td>0%</td>
</tr>
</tbody>
</table>

* Students in these Areas of Concentration need one or more of the listed courses.

CURRICULUM:

This proposed course would be included in the B.S. in Natural Resources Ecology and Management Areas of Concentration in Wildlife Ecology.
Upland Game Bird Biology

RNR 4016 (4 cr.): Spring 2017
Lecture: Mon/Wed/Fri 1:30-2:30, RNR 142
Lab: Wednesday 2:30-5:30

INSTRUCTORS:  
Dr. Bret Collier  
Office: 341A RNR  
Office Hours: M/W/F after class, or by appointment  
Email: bcollier@agcenter.lsu.edu (best method)  
Office Phone: 225-578-4192

MOODLE: TBA

COURSE DESCRIPTION AND GOALS  
The goal of this course is to familiarize you with the ecology and management of hunted North American North American and select important European, Asian, and African upland birds throughout their annual cycle, by applying broad concepts from life history theory, behavioral ecology, and wildlife management. Each week, we will strive to provide basic background information on specific topics, and integrate this with new advances on the forefront of game bird research and management. You will be exposed to methods of population monitoring and management, habitat management, and human dimensions of conservation.

This class will provide you with a background in:  
• Identification, aging, and sexing of North American and select important European, Asian, and African upland game birds, both in the lab and in the field  
• Critically reviewing scientific literature and technical reports  
• Teamwork and communication skills through a class presentation on topic related to upland bird ecology or management, as well as a written review paper.  
• Interacting with upland wildlife researchers and managers, as well as other stakeholders concerned with upland bird conservation

LECTURE AND LAB  
Lectures will take place M/W/F in RNR 142. Lectures will focus on providing you with a background in upland bird ecology and management, with time for discussion of current literature (readings TBA). Your participation in these discussions and overall engagement during lecture are important. At all times, you are encouraged to ask questions and offer (substantive) commentary.

Labs will take place in RNR 206 unless otherwise stated. During the first two lab periods will be walking over to the LSU Museum of Natural Science to view research specimens and learn upland bird identification. Other lab periods we will be going on field trips around the Baton Rouge area, and in some cases, trips will be long enough that we will forgo lecture that day. Please plan on attending all field trips; if you must miss a field trip, you will need to discuss make-up arrangements with me. Finally, we will designate several lab periods as data analysis “workshops” where you will work through exercises in small groups. In general, labs will last the full period, so please plan your schedules accordingly.

OVERNIGHT FIELD TRIPS  
We will take at least two overnight weekend field trips to permit viewing upland birds and habitats, and to meet with researchers and managers. We may also take occasional field trips during the lab period on Wednesday afternoons. More details are provided in the class schedule.

READINGS:  
• Readings will be assigned

GRADING:  
Following the table below, your grade will not be less than these ranges (i.e., a 90% will never be less than A-).

| Grade | Qpts |  |
|-------|------|----------|----------|----------|----------|----------|----------|
| A+    | 4.3  | >97.0    |  |
| A     | 4.0  | 93.0-96.9| 2.3 Qpts | 77.0-79.9|  |
| A-    | 3.7  | 90.0-92.9| C        | 2.0 Qpts | 73.0-76.9|  |
| B+    | 3.3  | 87.0-89.9| C-       | 1.7 Qpts | 70.0-72.9|  |
| B     | 3.0  | 83.0-86.9| D+       | 1.3 Qpts | 67.0-699 |  |
| B-    | 2.7  | 80.0-82.9| D        | 1.0 Qpts | 63.0-66.9|  |

| Grade | Qpts |  |
|-------|------|----------|----------|----------|----------|----------|
| F     | 1.0  | < 60.0   |  |

F = < 60.0
Grading:

- Midterm exams (2 @ 100 pts. each) 200
- Lab exam 100
- Class presentation 100
- Final exam 150
- Student paper 50
- Participation 40
- Field trips 60
- Total 700

Re-grades: Must be submitted directly to Dr. Collier, in person, within one week after exams are returned. The entire test will be re-graded; that is, there is the potential to both gain and lose points. Do not change your answers and ask for a re-grade.

Participation: Enthusiastic participation in lecture and lab is crucial, especially when we are hosting guest speakers. Attendance is obviously a prerequisite for participation. Guidelines for evaluating participation are as follows:

- Excellent (40 points): The student comes well-prepared, and always engages with the lecturer and other students in a constructive, positive manner. The student goes out of his/her way to ask questions and offer insightful commentary, and tends to lead classes in discussion.
- Good (30 points): The student is generally well-prepared, and often offers substantial commentary and questions. The student is an active participant in group discussions.
- Satisfactory (20 points): The student sometimes is well-prepared, and occasionally asks questions. The student participates in discussions when prodded.
- Non-participant (10 points): The student is rarely prepared for lecture, and rarely or ask questions or offers commentary. The student is disengaged from lecture and lab.
- Negative participant (0 points): The student is unprepared for lecture and lab, and wastes valuable time asking irrelevant questions or forcing the entire group to play catch-up.

Field Trips: For most field trips, you will be asked to keep a field notebook of upland bird sightings and other natural history observations. The quality of these notebooks will be the primary determining factor of your field trip grade. 3 short field trips will be worth 10 points each; 2 overnight field trips will be worth 15 points each.

Student Paper: Students will complete a 10 page, fully cited management review of an upland game bird. Review will include current population assessment and trends, historic and current regulations, and historic and current management practices.

Class Presentation: Students will review the natural history of an upland game bird (i.e., a species account). Presentations will be 15 minutes with 5 minute question period.

CLASSROOM RESPECT
- Class will begin on time. Please show up on time.
- Do not use your cell phones in class.
- Please stay focused in lecture. Most people cannot use their laptops and remain focused; if you use a laptop, it must have a privacy screen to avoid distracting other students.
- Field trips should be viewed as a privileged activity; show the utmost respect for the people and places we visit.

UNIVERSITY POLICY STATEMENTS

Attendance: LSU policy statements 22 and 24 and Faculty Senate resolution 12-3 state that individual faculty determine excuse and unexcused absences, and that attendance can be graded by randomly taking attendance during 12 randomly selected lectures. An unexcused absence during any graded activity will result in a 0 for the activity. Excused absences and make-up opportunities will be granted for university-approved off-campus activities, religious holidays, professional development activities, job interviews, and severe illnesses. Please contact me before course activities if possible to schedule a make-up.

Academic integrity: Cheating and plagiarism will not be tolerated in any form; it damages the integrity of the student, the department, and university, and can far-reaching effects into the future (e.g. "I don’t hire RNR grads anymore because I had one who cheated his (her) way through and was an awful employee"). We use of plagiarism detection software. Students violating the Academic Dishonesty policy of the LSU Code of Student Conduct will be referred to Student Advocacy & Accountability.

Disability statement: Louisiana State University is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please see a staff member in Disability Services (115 Johnston Hall) so that such accommodations can be considered. Students that receive accommodation letters, please meet with me to discuss the provisions of those accommodations as soon as possible.
Credit expectations: For each earned credit, students must spend a minimum of 1 hour per week in lecture class or 3 hours per week in lab, and a minimum of 2-3 hours per week of studying/homework outside of class.

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>Wed.</td>
<td>1/14</td>
<td>Introduction to upland birds, morphology</td>
<td></td>
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<tr>
<td>Fri.</td>
<td>1/16</td>
<td><em>Upland bird</em> taxonomy</td>
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<tr>
<td>Mon.</td>
<td>1/19</td>
<td>No class - MLK</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>1/21</td>
<td>Intro to upland bird ID</td>
<td></td>
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<tr>
<td>Fri.</td>
<td>1/23</td>
<td>Annual cycle, mating systems</td>
<td></td>
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<tr>
<td>Mon.</td>
<td>1/26</td>
<td>Habitat selection and territoriality</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>1/28</td>
<td>Research and writing methods</td>
<td></td>
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<tr>
<td>Fri.</td>
<td>1/30</td>
<td>Reproductive ecology</td>
<td></td>
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<tr>
<td>Mon.</td>
<td>2/2</td>
<td>Nesting ecology</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>2/4</td>
<td>Intro to aging and sexing upland birds</td>
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<tr>
<td>Fri.</td>
<td>2/6</td>
<td>Guest speaker – Jeff Dugay</td>
<td></td>
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<tr>
<td>Fri.-Sat.</td>
<td>2/7</td>
<td>Overnight to Kisatchie National Forest</td>
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<tr>
<td>Mon.</td>
<td>2/9</td>
<td>Breeding ecology - brood ecology and management</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>2/11</td>
<td>Molt and molt migrations</td>
<td><strong>Field Trip – Tunica Hills WMA</strong></td>
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<tr>
<td>Fri.</td>
<td>2/13</td>
<td>1st PAPER DUE; Breeding habitat management</td>
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<tr>
<td>Mon.</td>
<td>2/16</td>
<td>No class - Mardi Gras</td>
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<tr>
<td>Wed.</td>
<td>2/18</td>
<td>Breeding, movement, and wintering habitat</td>
<td><strong>Nesting data analysis exercise</strong></td>
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<tr>
<td>Fri.</td>
<td>2/20</td>
<td>Movement ecology</td>
<td></td>
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<tr>
<td>Mon.</td>
<td>2/23</td>
<td>EXAM 1</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>2/25</td>
<td>(no lecture)</td>
<td><strong>Field trip – Telemetry</strong></td>
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<tr>
<td>Fri.</td>
<td>2/27</td>
<td>Foraging ecology, nutrition, energetics</td>
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<tr>
<td>Mon.</td>
<td>3/2</td>
<td>Wintering grounds management part 1</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>3/4</td>
<td>Intro to Ft. Polk WMA</td>
<td><strong>Field trip – Ft. Polk WMA</strong></td>
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<tr>
<td>Fri.</td>
<td>3/6</td>
<td>Guest speaker - TBA</td>
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<tr>
<td>Sat.</td>
<td>3/7</td>
<td>Fri.-Sat. overnight to Dickson Aviary, Shreveport</td>
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<tr>
<td>Date</td>
<td>Day</td>
<td>Activity</td>
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<tr>
<td>Mon.</td>
<td>3/9</td>
<td>Wintering habitat management part 2</td>
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<tr>
<td>Wed.</td>
<td>3/11</td>
<td>Mike Kaller - upland bird foods and lab</td>
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<tr>
<td>Fri.</td>
<td>3/13</td>
<td>Upland management</td>
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<tr>
<td>Mon.</td>
<td>3/16</td>
<td>EXAM 2</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>3/18</td>
<td>Guest speaker - TBA</td>
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<tr>
<td>Fri.</td>
<td>3/20</td>
<td>Upland bird policy and management - historical</td>
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<tr>
<td>Mon.</td>
<td>3/23</td>
<td>Upland bird policy and management - current</td>
<td></td>
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<tr>
<td>Wed.</td>
<td>3/25</td>
<td>Guest speaker - TBA</td>
<td></td>
</tr>
<tr>
<td>Fri.</td>
<td>3/27</td>
<td>Nuisance species</td>
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<tr>
<td>Mon.</td>
<td>3/30</td>
<td>Human dimensions</td>
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<tr>
<td>Wed.</td>
<td>4/1</td>
<td>Guest speaker - TBA</td>
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<tr>
<td>Fri.</td>
<td>4/3</td>
<td>No class - spring break</td>
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<tr>
<td>Mon.</td>
<td>4/6</td>
<td>No class - spring break</td>
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<tr>
<td>Wed.</td>
<td>4/8</td>
<td>No class - spring break</td>
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<tr>
<td>Fri.</td>
<td>4/10</td>
<td>No class - spring break</td>
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<tr>
<td>Mon.</td>
<td>4/13</td>
<td>Future of upland bird management</td>
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<tr>
<td>Wed.</td>
<td>4/15</td>
<td>Lab review</td>
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<tr>
<td>Fri.</td>
<td>4/17</td>
<td>Student presentations</td>
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<td>Sat.</td>
<td>4/18</td>
<td>Nest searching field trip</td>
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<td>Mon.</td>
<td>4/20</td>
<td>Student presentations</td>
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<tr>
<td>Wed.</td>
<td>4/22</td>
<td>Lab Exam</td>
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<tr>
<td>Fri.</td>
<td>4/24</td>
<td>GRAD STUDENT PAPER DUE; Concluding remarks</td>
<td></td>
</tr>
<tr>
<td>Mon.</td>
<td>4/27</td>
<td>FINAL EXAM</td>
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Mike Kaller - upland bird foods and lab
Upland bird anatomy lab
Workshop in band recovery and survival analysis
Workshop in telemetry data analysis
Lab review
Lab Exam