REQUEST FOR ADDITION OF NEW COURSE

Proposed Course Description

Rubric & No. ENT M 4130

Title Introduction to Aquatic Entomology

Short Title (≤ 19 characters) INT AQUATIC EN TM

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? X 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 Cln/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

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

Course Description:

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

4130 Introduction to Aquatic Entomology (4). Also offered as RNR 4130. Prereq.: BIOL 1202 and BIOL 1209. 3 hrs. lecture; 3 hrs. lab. Occasional extended field trips. A collection is required. No entomology training is necessary. Students are responsible for paying travel expenses associated with this course. Provides a general understanding of global aquatic insect diversity and ecology with an emphasis on Louisiana and Gulf of Mexico Coastal Plains and lower Mississippi alluvial valley faunas. Provide students with practical skills of aquatic insect collection, curation, and identification.

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)

Attchments (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 12/9/10

William B. Richardson, Chair, FS C&C Committee (Date) 3/6/17

Jennifer Neal, js@lsu.edu Academic Affairs Approval (Date)
JUSTIFICATION:

Jointly, the Department of Entomology and School of Renewable Natural Resources propose to add an undergraduate-only introductory course to aquatic entomology. Increasingly, state and federal employers are seeking students with robust and diverse taxonomy and biodiversity coursework. Moreover, coursework in aquatic entomology has been disappearing across universities suggesting the need for taking advantage of faculty expertise and experience in the two academic units. For example, in Europe, undergraduate aquatic entomology is only offered in the United Kingdom. An extensive search of universities in the United States uncovered only 24 universities offering similar courses, including other southeastern peer institutions (e.g., North Carolina State University, Virginia Tech, Clemson University, and Auburn University). The only similar historic course at LSU, BIOL 4149 – Aquatic Invertebrate Ecology, was cancelled in 2009. Since then, undergraduate enrollment in the School of Renewable Natural Resources has increased from under 150 to over 300 students. Additionally, the College of the Coast and Environment has added an undergraduate program, which certainly could be served by this course.

A test special topics section occurred during spring 2016 with excellent student evaluations (5 of a possible 5!). A graduate course exists, however, the expectations for construction of a collection and laboratory notebooks are too high for undergraduates. This proposed course acknowledges that undergraduates will need different expectations.

CURRICULUM:

This proposed course would be included in the B.S. in Natural Resources Ecology and Management Areas of Concentration in Wildlife Ecology and Fisheries and Aquaculture.
Proposed Syllabus: Introduction to Aquatic Entomology
ENMT/RNR 4030
Michael Kaller Chris Carlton, Co-instructors
Spring 20XX

Contact Information
Michael Kaller: Office: RNR 119 E-mail: mkalle1@lsu.edu (preferred) Office hours: M 130-430 or by appointment. Phone: 578-0012
Chris Carlton Office: LSB 578 E-mail: ccarlton@lsu.edu (preferred)
Office hours by appointment. Phone: 578-0425
Brittany Owens Office: LSB 583 E-mail: bowens7@lsu.edu

Text (Not Required)

Third Editions (1996) may be found used for under $100. Changes between the editions are not meaningful for this course.

Course Objectives
1. Provide a general understanding of world wide aquatic insect diversity and ecology with an emphasis on Louisiana and Gulf of Mexico Coastal Plains and lower Mississippi alluvial valley faunas.
2. Provide students with practical skills of aquatic insect collection, curation, identification, and application of analytical techniques to aquatic insect data.

Class Structure
Class includes lecture and laboratory components. Attendance is essential because information will be presented that is selected and prioritized with the specific needs of the course in mind. Some material on exams will ONLY be covered in lectures. A background in entomology is not necessary but will be helpful. The course has three sections covering introductory material, taxonomy, and quantitative ecology. During the taxonomy section, natural units of lecture and lab will structure around order and family groups. Labs and lectures will be coordinated so that taxa covered in lecture will be available for study in subsequent labs.

Class participation is encouraged. During lecture and laboratory periods the class will be called upon to respond to questions and discussion topics concerning material presented. Short student presentations are included as part of the communication component of the course.

Grading and Evaluation Procedure
The grading system is based on the exam, key development, a collection, and lab books.

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory exams (2 @ 100 points each)</td>
<td>200 points</td>
</tr>
<tr>
<td>Key Development (5 @ 40 points each)</td>
<td>200 points</td>
</tr>
<tr>
<td>Lab book</td>
<td>100 points</td>
</tr>
<tr>
<td>Evaluation of Graduate Student Presentaion</td>
<td>100 points</td>
</tr>
<tr>
<td>Final Exam and Collection</td>
<td>400 points</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000 points</strong></td>
</tr>
</tbody>
</table>

Grading Scale:
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>Qpts</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.3 Qpts</td>
<td>&gt; 97.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0 Qpts</td>
<td>93.0-96.9</td>
</tr>
<tr>
<td>A-</td>
<td>3.7 Qpts</td>
<td>90.0-92.9</td>
</tr>
<tr>
<td>B+</td>
<td>3.3 Qpts</td>
<td>87.0-89.9</td>
</tr>
<tr>
<td>B</td>
<td>3.0 Qpts</td>
<td>83.0-86.9</td>
</tr>
<tr>
<td>B-</td>
<td>2.7 Qpts</td>
<td>80.0-82.9</td>
</tr>
<tr>
<td>C+</td>
<td>2.3 Qpts</td>
<td>77.0-79.9</td>
</tr>
<tr>
<td>C</td>
<td>2.0 Qpts</td>
<td>73.0-76.9</td>
</tr>
<tr>
<td>C-</td>
<td>1.7 Qpts</td>
<td>70.0-72.9</td>
</tr>
<tr>
<td>D+</td>
<td>1.3 Qpts</td>
<td>67.0-699</td>
</tr>
<tr>
<td>D</td>
<td>1.0 Qpts</td>
<td>63.0-66.9</td>
</tr>
<tr>
<td>D-</td>
<td>0.7 Qpts</td>
<td>60.0-62.9</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60.0</td>
<td></td>
</tr>
</tbody>
</table>

Laboratory Exam
Laboratory exams will consist of a series of stations containing specimens for sight identification of taxa and short answer questions. The second laboratory exam will not be cumulative.

Key Development
Students will develop individual dichotomous keys for five different taxa (40 points each), which will be determined by the faculty and teaching assistant. Proper understanding of dichotomous keys allows students to apply knowledge in future professional settings, therefore, constructed keys will be expected to be adaptable and specific, simultaneously.
Lab Book

Students will be expected to keep a lab book during on-campus lab and field activities. Lab books will consist of morphological sketches of insects introduced in the lab or field, as well as, notes on the physiology, biology, and ecology. No fewer than 5 insect taxa will be recorded each activity. High quality lab books will contain sketches and detailed notes about morphology and behavior of live specimens. Grading will be based on completeness [e.g., no less than 40 insect sketches (75%) and notes on morphology (5%), behavior (5%), physiology (5%), biology (5%), and ecology (5%)]. Lab books will be due the last lecture period of the semester.

Field Trips

The instructors will organize at least 1 field trip. The date and time of the field trip will be determined based on student and instructor schedules. During this field trip, instructors will demonstrate collection methods and assist students in obtaining insects for their collections. Field trips will occur outside of scheduled course time. Relief time will be provided during regular course time. Students unable to attend trips because of university approved excuses will be offered an alternative activity. Additionally, students will be expected to self-organize two additional collection trips. Instructors will facilitate these trips by offering suggested collection sites, making available collection gear, and assisting with access to departmental vehicles.

Collection

Each student is expected to make a collection of 40 specimens, preferably of 40 different families. Because only 5 on-campus labs will be held, the students are expected to use their own time to collect insects. Collections are worth up to 400 points. Collections turned in after the due date will lose 15% of their point totals for every day they are late. Any specimens that are turned in with obviously fabricated label data will be reported to the Dean of Students. If you are uncertain about any data, that uncertainty should be reflected on the label (e.g., "spring 2017" if you lost track of the exact date of the collection). Manage your sample data carefully!

Specimens must be properly identified to get credit. Instructors will stop tallying points at 400.
- Order: 10 points each
- Family: 6 points each
- Genus: 6 points each
- Species: 4 points each
- Series: 4 points for each series (5 or more individuals) of the same species or similar morphospecies within a family or genus (morphospecies is an assignment based on similarity when the exact species determination has not, or cannot be determined).
- Curation and labeling: 50 points

A list of specimens must be turned in. Provide the reference used to identify each specimen (e.g., "Merritt et al, 2008, p. 503"). A collection without this list will be considered incomplete.

Examples of a point calculation for a collection:
8 orders (80 pts) + 40 families (240 pts) + 0 genus (0 pts) + 0 species (0 pts) + 0 series (0 pts) + Curation (80 pts) = 400 pts (out of a possible 400)

8 orders (80 pts) + 30 families (180 pts) + 5 genera (30 pts) + 1 species (4 pts) + 0 series (0 pts) + Curation (35 pts) = 329 pts (out of a possible 400)

Students may only trade specimens from series. All specimens must be labeled with the proper collector and identifier (give credit where credit is due).

Examples of well curated student collections will be available for inspection, and detailed instructions for preparing specimens will be provided during the first lab period.

Students are required to turn in a set of 15 correctly prepared specimens near the midpoint of the collection. We will critique them and provide feedback to improve the final product, but they will not be graded.

Evaluation of Graduate Student Presentations

Students will attend presentations given by graduate students enrolled in ENTM/RNR 7030. Students will complete evaluation forms for each presentation. Grade will be based on attending presentations (75%) and completing evaluations (25%).

LSU Required and Recommended Statements:

Intellectual Property: Pursuant to Chapter VII of the Bylaws and Regulations of the LSU Board of Supervisors, course content, including all lectures, exams, assignments, Powerpoints, and activities, are the intellectual property of the course instructor and LSU.

1) You DO NOT have permission to reproduce and/or distribute Powerpoints and handouts.

2) You DO NOT have permission to take photographs of Powerpoints, or handouts during class or any class-related events, although taping the class is acceptable.

Attendance: Class attendance and inclusion of attendance in grade calculation at LSU is covered by LSU Policy Statements 22 and 44 and Faculty Senate Resolution 12-3. We consider attendance to be of paramount importance for this class. If you have a valid reason for missing class, see me beforehand and/or make sure you have appropriate documentation afterward, and make sure you obtain the material covered in the missed class from a classmate.
**Academic Integrity:** At LSU, plagiarism is defined to include any use of another's work and submitting that work as one's own. This means not only copying passages of writing or direct quotations but also paraphrasing or using structure or ideas without citation. Learning how to paraphrase and when and how to cite is an essential step in maintaining academic integrity. More details can be found at [http://saa.lsu.edu/Plagiarism.html](http://saa.lsu.edu/Plagiarism.html). Students in this class must abide by these standards.

**Disabilities:** The University is committed to making reasonable efforts to assist individuals with disabilities in their efforts to avail themselves of services and programs offered by the University. To this end, Louisiana State University will provide reasonable accommodations for persons with documented qualifying disabilities. If you have a disability and feel you need accommodations in this course, you must present a letter to me from Disability Services in 115 Johnston Hall, indicating the existence of a disability and the suggested accommodations.

**LSU credit expectations:** To earn one hour of course credit, a student is expected spend a minimum of 1 hour per week in lecture or 3 hours per week in lab and a minimum of 2-3 hours per week studying or completing homework outside of class or lab.

**LSU student code of conduct:** The LSU student code of conduct explains student rights, excused absences, and what is expected of student behavior. Students are expected to understand this code as described here: [http://catalog.lsu.edu/content.php?catoid=12&navoid=822](http://catalog.lsu.edu/content.php?catoid=12&navoid=822). Any violations of the LSU student code will be duly reported to the Dean of Students.

---

**Example Course Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topics</th>
<th>Lab Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 14</td>
<td>Introduction to insects</td>
<td>Local Field Trip (Saturday – 1/16)</td>
</tr>
<tr>
<td>Jan. 19, 22</td>
<td>Aquatic environments and special features of aquatic insects</td>
<td>Specimen sorting and curation, student collection time</td>
</tr>
<tr>
<td>Jan. 26, 29</td>
<td>Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 2, 4</td>
<td>Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 9, 11</td>
<td>MARDI GRAS/Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 16, 18</td>
<td>Taxonomic coverage</td>
<td>Lab Exam 1</td>
</tr>
<tr>
<td>Feb. 23, 25</td>
<td>Taxonomic coverage and <strong>first 15 specimens due</strong></td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 1, 3</td>
<td>Collecting and sampling</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 8, 10</td>
<td>Insect-habitat relationships</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 15, 17</td>
<td>Insect distributions across spatial scales</td>
<td>Lab Exam 2</td>
</tr>
<tr>
<td>Mar. 22, 25</td>
<td>SPRING BREAK – No Class</td>
<td>Overnight Field Trip (Tentative)</td>
</tr>
<tr>
<td>Mar. 29, 31</td>
<td>Relations among insects and other aquatic organisms and behavioral adaptations</td>
<td>Student collection time</td>
</tr>
<tr>
<td>Apr. 5, 7</td>
<td>Ecosystem roles of aquatic insects</td>
<td>Student collection time</td>
</tr>
<tr>
<td>Apr. 12, 14</td>
<td>Analytical methods</td>
<td>Software demonstration lab</td>
</tr>
<tr>
<td>Apr. 19, 21</td>
<td>Analytical methods/Biomonitoring</td>
<td>Graduate Student Presentations</td>
</tr>
<tr>
<td></td>
<td><strong>Lab book due</strong></td>
<td>Graduate Student Presentations</td>
</tr>
<tr>
<td>Apr. 26, 28</td>
<td><strong>Graduate Student Presentations</strong></td>
<td><strong>Graduate Student Presentations/Collection due</strong></td>
</tr>
</tbody>
</table>
REQUEST FOR ADDITION OF NEW COURSE

PROPOSED COURSE DESCRIPTION

Rubric & No. | RNR 4130 | Title | Introduction to Aquatic Entomology

Short Title (≤ 19 characters) | I N T A Q U A T I C E N T O M

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 _ | Pass/Fail _ | Final Exam: ** | Yes _ | No _

**(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)

4130 Introduction to Aquatic Entomology (4) See ENTM 4130.

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

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

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

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 | 12/9/14

D. A. Bachtel

Department Chair Signature: (date) 14 Nov 16

William B. Richardson

College Dean Signature: (date) 12/9/10

Jennifer Neal jshern@lsusu.edu

College Contact: (E-mail)

Jeffrey A. Wiese 1/35/17 (Rec'd that date)

Graduate Dean Signature: (date)

John B. Hoplo

Chair, FS C&C Committee: (date) 11/9/17

Academic Affairs Approval: (date) Made 7/8/11
JUSTIFICATION:

Jointly, the Department of Entomology and School of Renewable Natural Resources propose to add an undergraduate-only introductory course to aquatic entomology. Increasingly, state and federal employers are seeking students with robust and diverse taxonomy and biodiversity coursework. Moreover, coursework in aquatic entomology has been disappearing across universities suggesting the need for taking advantage of faculty expertise and experience in the two academic units. For example, in Europe, undergraduate aquatic entomology is only offered in the United Kingdom. An extensive search of universities in the United States uncovered only 24 universities offering similar courses, including other southeastern peer institutions (e.g., North Carolina State University, Virginia Tech, Clemson University, and Auburn University). The only similar historic course at LSU, BIOL 4149 – Aquatic Invertebrate Ecology, was cancelled in 2009. Since then, undergraduate enrollment in the School of Renewable Natural Resources has increased from under 150 to over 300 students. Additionally, the College of the Coast and Environment has added an undergraduate program, which certainly could be served by this course.

A test special topics section occurred during spring 2016 with excellent student evaluations (5 of a possible 5!). A graduate course exists, however, the expectations for construction of a collection and laboratory notebooks are too high for undergraduates. This proposed course acknowledges that undergraduates will need different expectations.

CURRICULUM:

This proposed course would be included in the B.S. in Natural Resources Ecology and Management Areas of Concentration in Wildlife Ecology and Fisheries and Aquaculture.
Proposed Syllabus: Introduction to Aquatic Entomology
ENTM/RNR 4030
Michael Keller Chris Carlton, Co-instructors
Spring 20XX

Contact Information
Michael Keller: Office: RNR 119 E-mail: mkalle1@lsu.edu (preferred) Office hours: M 130-430 or by appointment. Phone: 578-0012
Chris Carlton Office: LSB 578 E-mail: ccartl@lsu.edu (preferred) Office hours by appointment. Phone: 578-0425
Brittany Owens Office: LSB 583 E-mail: bowens7@lsu.edu

Text (Not Required)

Third Editions (1996) may be found used for under $100. Changes between the editions are not meaningful for this course.

Course Objectives
1. Provide a general understanding of world wide aquatic insect diversity and ecology with an emphasis on Louisiana and Gulf of Mexico Coastal Plains and lower Mississippi alluvial valley faunas.
2. Provide students with practical skills of aquatic insect collection, curation, identification, and application of analytical techniques to aquatic insect data.

Class Structure
Class includes lecture and laboratory components. Attendance is essential because information will be presented that is selected and prioritized with the specific needs of the course in mind. Some material on exams will ONLY be covered in lectures. A background in entomology is not necessary but will be helpful. The course has three sections covering introductory material, taxonomy, and quantitative ecology. During the taxonomy section, natural units of lecture and lab will structure around order and family groups. Labs and lectures will be coordinated so that taxa covered in lecture will be available for study in subsequent labs.

Class participation is encouraged. During lecture and laboratory periods the class will be called upon to respond to questions and discussion topics concerning material presented. Short student presentations are included as part of the communication component of the course.

Grading and Evaluation Procedure
The grading system is based on the exam, key development, a collection, and lab books.

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory exams (2 @ 100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Key Development (5 @ 40 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Lab book</td>
<td>100</td>
</tr>
<tr>
<td>Evaluation of Graduate Student Presentation</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam and Collection</td>
<td>400</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
</tr>
</tbody>
</table>

Grading Scale:
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>Qpts</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.3</td>
<td>&gt;97.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
<td>93.0-96.9</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td>90.0-92.9</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>87.0-89.9</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>83.0-86.9</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>80.0-82.9</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td>77.0-79.9</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>73.0-76.9</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td>70.0-72.9</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
<td>67.0-69.9</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>63.0-66.9</td>
</tr>
<tr>
<td>D-</td>
<td>0.7</td>
<td>60.0-62.9</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>&lt;60.0</td>
</tr>
</tbody>
</table>

Laboratory Exam
Laboratory exams will consist of a series of stations containing specimens for sight identification of taxa and short answer questions. The second laboratory exam will not be cumulative.

Key Development
Students will develop individual dichotomous keys for five different taxa (40 points each), which will be determined by the faculty and teaching assistant. Proper understanding of dichotomous keys allows students to apply knowledge in future professional settings, therefore, constructed keys will be expected to be adaptable and specific, simultaneously.
Lab Book

Students will be expected to keep a lab book during on-campus lab and field activities. Lab books will consist of morphological sketches of insects introduced in the lab or field, as well as notes on the physiology, biology, and ecology. No fewer than 5 insect taxa will be recorded each activity. High quality lab books will contain sketches and detailed notes about morphology and behavior of live specimens. Grading will be based on completeness [e.g., no less than 40 insect sketches (75%) and notes on morphology (5%), behavior (5%), physiology (5%), biology (5%), and ecology (5%)]. Lab books will be due the last lecture period of the semester.

Field Trips

The instructors will organize at least 1 field trip. The date and time of the field trip will be determined based on student and instructor schedules. During this field trip, instructors will demonstrate collection methods and assist students in obtaining insects for their collections. Field trips will occur outside of scheduled course time. Relief time will be provided during regular course time. Students unable to attend trips because of university approved excuses will be offered an alternative activity. Additionally, students will be expected to self-organize two additional collection trips. Instructors will facilitate these trips by offering suggested collection sites, making available collection gear, and assisting with access to departmental vehicles.

Collection

Each student is expected to make a collection of 40 specimens, preferably of 40 different families. Because only 5 on-campus labs will be held, the students are expected to use their own time to collect insects. Collections are worth up to 400 points. Collections turned in after the due date will lose 15% of their point totals for every day they are late. Any specimens that are turned in with obviously fabricated label data will be reported to the Dean of Students. If you are uncertain about any data, that uncertainly should be reflected on the label (e.g., "spring 2017" if you lost track of the exact date of the collection). Manage your sample data carefully!

Specimens must be properly identified to get credit. Instructors will stop tallying points at 400.

- Order: 10 points each
- Family: 6 points each
- Genus: 6 points each
- Species: 4 points each
- Series: 4 points for each series (5 or more individuals) of the same species or similar morphospecies within a family or genus (morphospecies is an assignment based on similarity when the exact species determination has not, or cannot be determined).

Curation and labeling: 50 points

A list of specimens must be turned in. Provide the reference used to identify each specimen (e.g., "Merritt et al, 2008, p. 503"). A collection without this list will be considered incomplete.

Examples of a point calculation for a collection:

- 8 orders (80 pts) + 40 families (240 pts) + 0 genus (0 pts) + 0 species (0 pts) + 0 series (0 pts) + Curation (80 pts) = 400 pts (out of a possible 400)

- 8 orders (80 pts) + 30 families (180 pts) + 5 genera (30 pts) + 1 specie (4 points) + 0 series (0 pts) + Curation (35 pts) = 329 pts (out of a possible 400)

Students may only trade specimens from series. All specimens must be labeled with the proper collector and identifier (give credit where credit is due).

Examples of well curated student collections will be available for inspection, and detailed instructions for preparing specimens will be provided during the first lab period.

Students are required to turn in a set of 15 correctly prepared specimens near the midpoint of the collection. We will critique them and provide feedback to improve the final product, but they will not be graded.

Evaluation of Graduate Student Presentations

Students will attend presentations given by graduate students enrolled in ENTM/RNR 7030. Students will complete evaluations forms for each presentation. Grade will be based on attending presentations (75%) and completing evaluations (25%).

LSU Required and Recommended Statements:

Intellectual Property: Pursuant to Chapter VII of the Bylaws and Regulations of the LSU Board of Supervisors, course content, including all lectures, exams, assignments, Powerpoints, and activities, are the intellectual property of the course instructor and LSU.

1) You DO NOT have permission to reproduce and/or distribute Powerpoints and handouts.

2) You DO NOT have permission to take photographs of Powerpoints, or handouts during class or any class-related events, although taping the class is acceptable.

Attendance: Class attendance and inclusion of attendance in grade calculation at LSU is covered by LSU Policy Statements 22 and 44 and Faculty Senate Resolution 12-3. We consider attendance to be of paramount importance for this class. If you have a valid reason for missing class, see me beforehand and/or make sure you have appropriate documentation afterward, and make sure you obtain the material covered in the missed class from a classmate.
Rev. 9/2014

**Academic Integrity:** At LSU, plagiarism is defined to include any use of another's work and submitting that work as one's own. This means not only copying passages of writing or direct quotations but also paraphrasing or using structure or ideas without citation. Learning how to paraphrase and how and when to cite is an essential step in maintaining academic integrity. More details can be found at [http://saa.lsu.edu/Plagiarism.html](http://saa.lsu.edu/Plagiarism.html). Students in this class must abide by these standards.

**Disabilities:** The University is committed to making reasonable efforts to assist individuals with disabilities in their efforts to avail themselves of services and programs offered by the University. To this end, Louisiana State University will provide reasonable accommodations for persons with documented qualifying disabilities. If you have a disability and feel you need accommodations in this course, you must present a letter to me from Disability Services in 1:5 Johnston Hall, indicating the existence of a disability and the suggested accommodations.

**LSU credit expectations:** To earn one hour of course credit, a student is expected spend a minimum of 1 hour per week in lecture or 3 hours per week in lab and a minimum of 2-3 hours per week studying or completing homework outside of class or lab.

**LSU student code of conduct:** The LSU student code of conduct explains student rights, excused absences, and what is expected of student behavior. Students are expected to understand this code as described here: [http://catalog.lsu.edu/content.php?catoid=12&navoid=822](http://catalog.lsu.edu/content.php?catoid=12&navoid=822). Any violations of the LSU student code will be duly reported to the Dean of Students.

---

**Example Course Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topics</th>
<th>Lab Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 14</td>
<td>Introduction to insects</td>
<td>Local Field Trip (Saturday – 1/16)</td>
</tr>
<tr>
<td>Jan. 19-22</td>
<td>Aquatic environments and special features of aquatic insects</td>
<td>Specimen sorting and curation, student collection time</td>
</tr>
<tr>
<td>Jan. 26, 29</td>
<td>Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 2,4</td>
<td>Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 9,11</td>
<td>MARDI GRAS/Taxonomic coverage</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Feb. 16,18</td>
<td>Taxonomic coverage</td>
<td>Lab Exam 1</td>
</tr>
<tr>
<td>Feb. 23, 25</td>
<td>Taxonomic coverage and <strong>first 15 specimens due</strong></td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 1, 3</td>
<td>Collecting and sampling</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 8,10</td>
<td>Insect-habitat relationships</td>
<td>Taxonomy lab</td>
</tr>
<tr>
<td>Mar. 15,17</td>
<td>Insect distributions across spatial scales</td>
<td>Lab Exam 2</td>
</tr>
<tr>
<td>Mar. 22,25</td>
<td>SPRING BREAK – No Class</td>
<td>Overnight Field Trip (Tentative)</td>
</tr>
<tr>
<td>Mar. 29,31</td>
<td>Relations among insects and other aquatic organisms and behavioral adaptations</td>
<td>Student collection time</td>
</tr>
<tr>
<td>Apr. 5,7</td>
<td>Ecosystem roles of aquatic insects</td>
<td>Student collection time</td>
</tr>
<tr>
<td>Apr. 12,14</td>
<td>Analytical methods</td>
<td>Software demonstration lab</td>
</tr>
<tr>
<td>Apr. 19,21</td>
<td>Analytical methods/Biomonitoring <strong>Lab book due</strong></td>
<td>Graduate Student Presentations</td>
</tr>
<tr>
<td>Apr. 26, 28</td>
<td><strong>Graduate Student Presentations</strong></td>
<td><strong>Graduate Student Presentations/Collection due</strong></td>
</tr>
</tbody>
</table>