Revised Assessment Plan – Department of Entomology and Plant Pathology

A. Degree Program – B.S.

Entomology – (options currently in insect biology and ecology (IBAE), and Bioforensics, Premedical and Preveterinary Sciences (BPP).

B. Mission and Vision

The mission of the Department of Entomology and Plant Pathology is to discover, develop, disseminate and preserve entomological and plant pathological knowledge needed to enhance the productivity, profitability and sustainability of the natural and agricultural resources of Oklahoma and the world. To this end, the department proposes to offer a nationally recognized program in entomology that graduates qualified professionals for positions in industry, education and further professional matriculation. Students will be educated in basic insect biology, integrated pest management, classification, ecological methods, molecular biology and current practices that prepare them to analyze and solve problems related to integrated management of insect problems. Through this process they will become proficient entomologists who are able to contribute to the existing scientific body of knowledge of insect biology and taxonomy.

Goals (pertaining to the teaching function) – Entomology

1. Offer effective, dynamic and progressive teaching programs that attract and motivate students and prepare them to work as professional entomologists or matriculate to professional or academic post-baccalaureate degrees.

2. Utilize the newest technologies and theories in solving problems in cooperation with other departments in the Division of Agricultural Sciences and Natural Resources, within the University and with external groups.

3. Increase public awareness of the contributions of Entomology and related industries to society.

Objectives - Entomology

1. Prepare students for varied careers broadly associated with the science of entomology.

2. Equip interested students with the educational background for graduate or professional schools.

3. Produce graduates that can broadly address the environmental needs and concerns related to arthropods in government or industry.

4. Equip students to understand the rationale, philosophy and necessity to managing arthropods in an effective, efficient, and environmentally sound manner.
6. Prepare students for involvement in technology transfer through teaching, extension and public service.

7. Prepare students for a lifetime of learning.

C. **Primary expected student learning outcomes**

<table>
<thead>
<tr>
<th>1. Graduates will possess knowledge of the discipline to equip them to (at least one of the following):</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Broadly address management of arthropod related problems in an effective, efficient and environmentally sound manner.</td>
</tr>
<tr>
<td>b. Contribute to the existing body of scientific knowledge related to arthropods</td>
</tr>
<tr>
<td>c. Comprehensively educate others about arthropods and issues related to arthropods.</td>
</tr>
</tbody>
</table>

D. **Methods that will be used to assess each outcome**

<table>
<thead>
<tr>
<th>1a. Capstone project in ENTO 4800 – Entomology Capstone Series. All of the student papers will be evaluated by a committee of three departmental faculty members. The attached rubric will be used to evaluate a sample of student work based on:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporation of appropriate knowledge from prerequisite courses</td>
</tr>
<tr>
<td>Organization of knowledge &amp; critical thinking</td>
</tr>
<tr>
<td>Clarity of writing &amp; reading comprehension</td>
</tr>
<tr>
<td>Quality of quantitative thinking</td>
</tr>
<tr>
<td>Overall knowledge of the subject</td>
</tr>
</tbody>
</table>

| 1b. Entomology Exit Test – all entomology undergraduate students will take a cursory efficiency exam to test basic entomology knowledge at the end of the semester they graduate. |

E. **Timeline for use of each method**

| Annually |

C. **Primary expected student learning outcomes**

| 2. Students can interpret the scientific literature and possess the ability to solve problems in the discipline of entomology. |

<table>
<thead>
<tr>
<th>2. Written reports from ENTO 4800 will be required. All students will be evaluated by a committee of three departmental faculty members. The attached rubric will be used to evaluate a sample of student work based on:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of the importance of the topic to Entomology or to science.</td>
</tr>
<tr>
<td>Organization of knowledge to address the stated problem.</td>
</tr>
<tr>
<td>Clarity of the written report.</td>
</tr>
<tr>
<td>Quality of quantitative thinking</td>
</tr>
<tr>
<td>Overall knowledge of the subject.</td>
</tr>
</tbody>
</table>

| Annually |

C. **Primary expected student learning outcomes**

| 3. Graduates will be satisfied with the educational experience in entomology, and will perceive that they were well prepared for the workplace; while simultaneously instilling a desire for lifelong learning.* |

| 3a. Exit Survey and Subsequent exit interview (Appendix I) |
| 3b. Undergraduate Alumni Survey (Appendix II) |

| Annually |

Rubric attached.
Information will be collected by the Entomology Undergraduate Assessment Committee and will, as appropriate, be discussed with the Department Head, Curriculum and Graduate Student Selection Committees. When ideas for improvement are identified, they will be brought to a departmental faculty meeting and acted upon by the appropriate faculty members, as identified by the Department Head.

Rubric for evaluation of projects in ENTO 4800 – Capstone series

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporation of appropriate knowledge from</td>
<td>No clear understanding of the required knowledge</td>
<td>Some features of 1 and some features of 3</td>
<td>Limited understanding of the required background knowledge.</td>
<td>Some features of 3 and some features of 5</td>
<td>Excellent understanding of the prerequisite information</td>
<td></td>
</tr>
<tr>
<td>prerequisite courses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization of knowledge (critical</td>
<td>Explanation does not illustrate organized thinking</td>
<td>Some features of 1 and some features of 3</td>
<td>Able to organize some specific thoughts but overall organization lacking</td>
<td>Some features of 3 and some features of 5</td>
<td>Very well organized</td>
<td></td>
</tr>
<tr>
<td>thinking abilities)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity of writing &amp; reading comprehension</td>
<td>Not clearly presented and/or extensive use of improper grammar</td>
<td>Some features of 1 and some features of 3</td>
<td>Demonstrated some clarity of presentation but still some writing problems</td>
<td>Some features of 3 and some features of 5</td>
<td>Writing is clear and free from grammar problems</td>
<td></td>
</tr>
<tr>
<td>Quality of quantitative thinking</td>
<td>Ideas are not supported by appropriate quantitative thinking</td>
<td>Some features of 1 and some features of 3</td>
<td>Data are supporting the writing but not clear throughout</td>
<td>Some features of 3 and some features of 5</td>
<td>All ideas are well supported by appropriately presented data</td>
<td></td>
</tr>
<tr>
<td>Overall knowledge of the subject</td>
<td>Inadequate knowledge of the subject</td>
<td>Some features of 1 and some features of 3</td>
<td>Knowledge of the some aspects of the subject</td>
<td>Some features of 3 and some features of 5</td>
<td>Very good knowledge of the subject in report</td>
<td></td>
</tr>
<tr>
<td>Clarity of verbal and presentation skills</td>
<td>Not clearly presented and/or extensive use of improper grammar</td>
<td>Some features of 1 and some features of 3</td>
<td>Demonstrated some clarity of presentation but still some communication problems</td>
<td>Some features of 3 and some features of 5</td>
<td>Verbal communication is clear and free from grammar problems</td>
<td></td>
</tr>
</tbody>
</table>
IV. Appendix – Evaluation of all undergraduate and graduate programs using initial exit survey and subsequent exit interview information from students.

1. Exit interview survey – Prior to an official exit interview, all graduates will be asked if their OSU education prepared them for their careers using the following questions, to be answered on a five point scale (1 = strongly disagree to 5 = strongly agree or not applicable).

   A. My OSU education prepared me to communicate ideas verbally and graphically.

   B. My OSU education taught me to analyze arthropod and/or plant disease related problems and propose relevant solutions.

   C. My OSU education provided me an understanding of integrated pest management and ecological methods associated with arthropods and/or plant pathogens.

   D. My OSU education provided me an understanding of basic diagnostic techniques for identifying arthropod and/or plant disease related problems.

Timeline: At the end of each academic year surveys will be tabulated and an assessment summary report provided.

2. Exit Interviews – All graduates will be asked to meet with the Department Head immediately prior to the time of graduation. These meetings will be informal, but notes from the meetings will be preserved. The exit interviews will include any discussion the graduate wishes to include but will always include questions concerning the curriculum, quality of instruction and advising, extracurricular activities and information pertaining to job placement. Results of these exit interviews (frequently heard concerns, new issues of interest, degree of satisfaction with the program, suggested changes) will be summarized and reported in the annual assessment report.
V. Appendix – Alumni Satisfaction Surveys for Entomology Degree Program

OSU Student Alumni Survey – Program-specific Questions for Entomology

1. What did you see as the primary strength of the Entomology program in which you participated?

2. What did you see as the primary weakness of the Entomology program in which you participated?

3. What should the department of Entomology and Plant Pathology do to improve its graduate programs (based on the one with which you were involved)?

4. Did you publish the research from your OSU dissertation?

5. I expanded my knowledge and skills in my field of study.
   1= not at all
   2= very little
   3= moderately
   4= above expectations
   5= a great deal
   Don’t know
   Refused

6. I improved my professional writing skills.
   1= not at all
   2= very little
   3= moderately
   4= above expectations
   5= a great deal
   Don’t know
   Refused

7. I improved my computer use/application skills.
   1= not at all
   2= very little
   3= moderately
   4= above expectations
   5= a great deal
   Don’t know
   Refused

8. I increased my ability to critically examine my own ideas and the ideas of others.
   1= not at all
   2= very little
   3= moderately
4 = above expectations
5 = a great deal
Don’t know
Refused

9. My performance in my current position has been enhanced because of the education I received during my OSU Entomology and Plant Pathology program.
1 = not at all
2 = very little
3 = moderately
4 = above expectations
5 = a great deal
Don’t know
Refused

10. Entomology and Plant Pathology faculty members were interested in the welfare and professional development of students. Would you……
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Don’t know
Refused

11. The quality of academic advising in the Entomology and Plant Pathology program was excellent. Would you ………
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Don’t know
Refused

12. I have continued to grow and learn in my professional and personal life. I consider myself a life long learner. Would you……
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Don’t know
Refused