Program Outcomes Assessment Report 2009-2010

Department of Biological Sciences

Program: Biology with options in Biological Health Sciences, Botany and Zoology

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MISSION STATEMENT

The Department of Biological Sciences is dedicated to providing the courses and programs that enable students to discover and achieve their highest potential. Students are prepared for careers by the breadth and rigor of each program; students develop the knowledge, skills, and habits necessary for responsible citizenship and continued self-improvement through lifelong learning.

GOALS

The biology degree program prepares students for careers in research, industry, and business, for post-baccalaureate studies in biology and related fields, or for professional programs. The Department strives to upgrade its equipment such that students have the opportunity to use state-of-the-art technology in academic and research activities.

LEARNING OUTCOMES

A student completing a B.S. degree in Biology shall be able to:

1. Demonstrate knowledge of basic biological principles, concepts, and theories.
2. Manifest both oral and written communication skills in presentation of complex biological topics.
3. Demonstrate a competency in the scientific method and the skills to use it (the acquisition, organization, and evaluation of data).
4. Show proficiency in library and computer skills in obtaining information and analyzing data.
5. Show the ability to anticipate, recognize, and respond appropriately to laboratory hazards or hazardous conditions, and take appropriate safety precautions.
6. Qualify for entry level employment or for continuing education.
ASSESSMENT OF OUTCOMES

A. Outcomes 1 & 3 - Demonstrate knowledge of basic biological principles, concepts and theories. Demonstrate a competency in the scientific method and the skills to use it (the acquisition, organization, and evaluation of data).

1. Twenty Biology students in the fall 2009 and spring 2010 senior seminar courses (capstone course) completed the ETS Major Field Test in Biology. The results are summarized in Table 1.

Table 1
Mean ± SD scores of SOSU Biology students on the ETS Major Field Test in Biology

<table>
<thead>
<tr>
<th>Group</th>
<th># of Students</th>
<th>Cell Biology</th>
<th>Molecular Biology and Genetics</th>
<th>Organismal Biology</th>
<th>Population Biology, Evolution, Ecology</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>20</td>
<td>48.2 ± 13.1</td>
<td>44.3 ± 9.2</td>
<td>46.5 ± 8.9</td>
<td>49.6 ± 10.9</td>
<td>146.3 ± 9.9</td>
</tr>
<tr>
<td>Nat. Avg *</td>
<td>30,854</td>
<td>55.0 ± 13.2</td>
<td>53.7 ± 13.1</td>
<td>53.1 ± 13.5</td>
<td>53.3 ± 13.3</td>
<td>153.4 ± 13.2</td>
</tr>
</tbody>
</table>

*National average for 2005-2009 available on ETS website. Percentiles also on ETS website.

2. Twenty Biology students in the fall 2009 and spring 2010 senior seminar course completed a departmental in-house exam. This exam was made 2007-2008. Those that taught the core courses for biology (Principles of Biology I, Principles of Biology II, Genetics, Ecology, and Cell and Molecular Biology) contributed 10 questions for each core area. The average for the in-house exam was 67.4% (SD 4.8).

3. Analysis and Interpretation

The average scores of Biology majors for all the subscores (Cell Biology, Molecular Biology and Genetics, Organismal Biology, Population Biology, Evolution, Ecology) and total score of the ETS Major Field Test in Biology were below the national average, but were within one standard deviation from the national mean (Table 1). Individual total scores ranged from the 90th percentile to the 1st percentile (avg. 25th). The ranges and average for subscores were similar to the total score: Cell Biology (avg. 25th, range from 85th to 1st), Molecular Biology & Genetics (avg. 20th, range from 65th to 1st), Organismal Biology (avg. 25th, range from 85th to 1st), Population Biology, Evolution & Ecology (avg. 35th, range from 95th to 1st). As you can see, we had individuals that performed extremely well and individuals that performed extremely poorly. Results of previous ETS exams from the last five years are summarized in Table 2.
Table 2
Mean ± SD scores of SOSU Biology students on the ETS Major Field Test in Biology

<table>
<thead>
<tr>
<th>Year</th>
<th># of Students</th>
<th>Cell Biology</th>
<th>Molecular Biology and Genetics</th>
<th>Organismal Biology</th>
<th>Population Biology, Evolution, Ecology</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2010</td>
<td>20</td>
<td>48.2 ± 13.1</td>
<td>44.3 ± 9.2</td>
<td>46.5 ± 8.9</td>
<td>49.6 ± 10.9</td>
<td>146.3 ± 9.9</td>
</tr>
<tr>
<td>2008-2009</td>
<td>42</td>
<td>45.9 ± 10.6</td>
<td>46.1 ± 10.1</td>
<td>46.5 ± 11.4</td>
<td>48.6 ± 9.4</td>
<td>146.0 ± 9.7</td>
</tr>
<tr>
<td>2007-2008</td>
<td>37</td>
<td>47.5 ± 12.1</td>
<td>43.1 ± 7.8</td>
<td>43.5 ± 11.5</td>
<td>47.3 ± 11.3</td>
<td>144.1 ± 10.3</td>
</tr>
<tr>
<td>2006-2007</td>
<td>31</td>
<td>46.7 ± 8.4</td>
<td>46.9 ± 9.6</td>
<td>42.9 ± 10.1</td>
<td>45.6 ± 10.8</td>
<td>143.9 ± 10.2</td>
</tr>
<tr>
<td>2005-2006</td>
<td>26</td>
<td>43.3 ± 10.1</td>
<td>47.5 ± 7.7</td>
<td>44.3 ± 10.3</td>
<td>40.5 ± 9.8</td>
<td>141.9 ± 8.2</td>
</tr>
</tbody>
</table>

The scores in the Cell Biology subsection have increased from 2005-2006. This represents a change from the 20th percentile to the 25th percentile. There also is an increase in the Population Biology, Evolution and Ecology in the last three years. This represents a change from the 15th percentile to the 35th percentile. In the fall of 2003 we modified the program with a new sequence of introductory biology classes. Principles of Biology I focuses on cellular biology. Principles of Biology II emphasizes ecology and evolution. The idea was that the two introductory classes would give students a better framework and make them better prepared for the other biology classes. I think the increase in the Cell Biology subscore may reflect that the Principles of Biology I course is giving the students a better understanding of cellular biology. I think the increase in Population, Biology, Evolution and Ecology subscores may reflect Principles of Biology II giving the students a better foundation of ecology and evolution; therefore, they are more prepared for it when they have it in other courses. The Organismal subscore went up the last couple of years. This may reflect our change to Principles of Biology II that gives an overview of the different taxonomy kingdoms or more students are taking the organismal classes like mammalogy, ornithology, and systematic botany as biology electives. Overall the scores on the ETS are slightly below the national average. The department sees a lack of student effort on the ETS exam. The score on the ETS exam has no major impact on the students. Although the scaled score is a portion of the Senior Seminar grade, the students are not very motivated to try to do well.

The results of the in-house exam are relatively good. This is almost what is considered a “C” which is average. This is the second year that it was administered. This exam replaced the old in-house exam which was obsolete. This exam will eventually be a pre-post test. The students in Principles of Biology I take this at the beginning of the class. Since this is the second year for the exam we don’t have the pretest scores. We plan on comparing the pre and post test scores and looking at the improvement, but complete sets of scores will

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not be available for four years. Just for comparison the average for students entering the Principles of Biology I class for this fall is 41.6%. We do not know if these students’ pretest scores would be similar. If they were similar, then the posttest score represents a 62.0% increase.

4. Program Modifications – No program modifications are being considered at this time based on this data.

B. Outcomes 2 & 4 - Manifest both oral and written communication skills in presentation of complex biological topics. Show proficiency in library and computer skills in obtaining information and analyzing data.

1. Oral and written communication skills of 20 students enrolled in senior seminar (Fall 2009 and Spring 2010) were assessed by a proposal paper. The paper required the students to obtain background information on the topic. The students needed to obtain information in the library and online. In addition to the written paper, the students were required to present the proposal orally to the class. The students used Powerpoint in their presentation. The average grade on the paper was 93.1 ± 12.5 and the average grade on the oral presentation was 89.5 ± 8.3.

2. Oral and written communications skills were also assessed in Ecology. This is a core biology class that every biology major has to have. In the class, the students perform a research project. They write a proposal before they perform the project and then a written paper and oral presentation describing the project and the results. The results are presented in Table 3.

<table>
<thead>
<tr>
<th>Semester</th>
<th># of students</th>
<th>Proposal (25 pts.)</th>
<th>Final Paper (50 pts.)</th>
<th>Oral Presentation (25 pts.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2009</td>
<td>22</td>
<td>20.5 ± 3.4</td>
<td>40.7 ± 6.4</td>
<td>21.2 ± 2.4</td>
</tr>
<tr>
<td>Spring 2010</td>
<td>22</td>
<td>21.7 ± 2.9</td>
<td>40.3 ± 6.5</td>
<td>21.2 ± 2.4</td>
</tr>
<tr>
<td>Summer 2010</td>
<td>14</td>
<td>n.a.</td>
<td>42.1 ± 4.3</td>
<td>21.5 ± 1.4</td>
</tr>
</tbody>
</table>

3. Many other biology courses required students to write papers and make oral presentations. It would be difficult to evaluate all of the papers. In addition several biology classes require students to maintain laboratory notebooks that need to explain the main concepts of the experiment. An exit questionnaire (see
appendix) was given to the 20 students enrolled in senior seminar. Some of the questions on the questionnaire inquired about how many papers and presentations that the students prepared in courses. The exit survey students took indicated that:

- 85% of them had to write 3 or more short (less than 5 pages) assignments
- 85% of them had to write 3 or more long (greater than 5 pages) assignments
- 85% of students indicated that they had to give 2 or more oral/poster presentations in their courses.
- 35% of the students indicated that they had to make at least two presentations with others in their courses.
- 2 students made an oral/poster presentation at a professional meeting
- 1 student made 4 or more oral/poster presentations at a professional meeting

4. Analysis and Interpretation

Overall the average grades on the proposal paper and oral presentation in senior seminar were good (93% and 90%). The grades have shown a slight increase over the last five years. The average grades are summarized in Table 4. The grades on the research paper and presentation in Ecology class were also good (81-84% average on the report and 85-86% average on the presentation). The average grades for the last five years on the Ecology report and presentation are summarized in Table 5. The students write many more papers (85% indicated they wrote at least 3 short papers and 85% indicated they wrote at least 3 long papers) and give many more presentations (85% indicated that they gave at least 3) in the program. In addition students are presenting at state/national professional meetings. These results indicate that the students are learning how to communicate complex biological complexes both in written and oral form.

<table>
<thead>
<tr>
<th>Year</th>
<th>Proposal Paper</th>
<th>Oral Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2010</td>
<td>93.1</td>
<td>89.5</td>
</tr>
<tr>
<td>2008-2009</td>
<td>91.3</td>
<td>89.5</td>
</tr>
<tr>
<td>2007-2008</td>
<td>88.7</td>
<td>88.4</td>
</tr>
<tr>
<td>2006-2007</td>
<td>87.3</td>
<td>84.6</td>
</tr>
<tr>
<td>2005-2006</td>
<td>80.1</td>
<td>83.7</td>
</tr>
</tbody>
</table>
Table 5
Mean Percent Grades on Research Paper and Oral Presentation in Ecology

<table>
<thead>
<tr>
<th>Year</th>
<th>Research Paper</th>
<th>Oral Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2010</td>
<td>81.7</td>
<td>85.1</td>
</tr>
<tr>
<td>2008-2009</td>
<td>83.7</td>
<td>86.3</td>
</tr>
<tr>
<td>2007-2008</td>
<td>82.5</td>
<td>82.3</td>
</tr>
<tr>
<td>2006-2007</td>
<td>82.8</td>
<td>82.2</td>
</tr>
<tr>
<td>2005-2006</td>
<td>85.7</td>
<td>87.0</td>
</tr>
</tbody>
</table>

5. Program modification - No program modifications are being considered at this time based on this data.

C. Outcome 5 - Show the ability to anticipate, recognize, and respond appropriately to laboratory hazards or hazardous conditions, and take appropriate safety precautions.

1. It is difficult to assess this directly. The faculty in the department agreed that making a test of this would be unproductive. It would be difficult to make questions without the answers being obvious. (ie. True or False: When working with preserved specimens one should use gloves.) Most of the biology classes have laboratory. In the labs the students learn safe laboratory procedures. They are given safety guidelines in the syllabi or the laboratory manual and professors instruct them on the safety procedures. The department does not have any safety problems in the laboratories and have not had any major accidents or injuries. We did not have any injury/incident reports handed in. An exit questionnaire was given to the 20 students enrolled in senior seminar. There was a question about whether students were given information concerning safe laboratory procedures. The exit survey (see appendix) indicated that 90% of the respondents had either excellent (75%) or more than adequate (15%) information provided concerning safe laboratory procedures.

2. Analysis and Interpretation

While our data do not directly assess whether the students would act appropriately regarding safety in the laboratory, our students perceive that they have been given excellent (75%) or more than adequate information (15%) regarding safety in the laboratory and we have not had any major accidents in the laboratories. The ratings have been consistent over the last five years. (Table 6)
Table 6
Rating of Safety Instruction

<table>
<thead>
<tr>
<th>Year</th>
<th>Excellent</th>
<th>More Than Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2010</td>
<td>75%</td>
<td>15%</td>
</tr>
<tr>
<td>2008-2009</td>
<td>59%</td>
<td>36%</td>
</tr>
<tr>
<td>2007-2008</td>
<td>66%</td>
<td>29%</td>
</tr>
<tr>
<td>2006-2007</td>
<td>61%</td>
<td>31%</td>
</tr>
<tr>
<td>2005-2006</td>
<td>62%</td>
<td>24%</td>
</tr>
<tr>
<td>2004-2005</td>
<td>68%</td>
<td>24%</td>
</tr>
</tbody>
</table>

3. Program modification - No program modifications are being considered at this time based on this data.

D. Outcome 6 - Qualify for entry level employment or for continuing education.

1. This is assessed by placement of graduates. We rely on students telling us that they have been accepted into graduate/professional schools or have gained employment in a biology related field. Two of our students were accepted into medical school. Two of our students have been accepted into physician assistant programs. One of our students was accepted into Dental School at OU. One of our students is a teacher. Another past student was accepted into a graduate program in Experimental Pathology at University of Texas. Two of our past students are research technicians at Nobel. Unfortunately, we rely on students telling us this data and this is the only information that we know of. There may be more students accepted into graduate/professional schools that we are not aware of.

2. Some of our students take the MCAT to enter medical school and we are given the scores of those students. Five students have taken the MCAT (medical college admission test) and released scores to us. The scores are 22, 22, 18, 15, and 13 (avg = 18.0). The minimum score to be accepted in most schools is 21.

3. Analysis and Interpretation

Some of our students have been successful in being accepted into graduate/professional programs. Over the past five years, ten of our graduates have been accepted into medical school, two of our students have been accepted into veterinary school, two of our students have been accepted into pharmacy school, two of our students have been accepted into dental school, two of our
students has been accepted into a physician assistant program, and one of our students has been accepted into optometry school. In addition six of our students have been accepted into graduate school and four of our students have had INBRE summer internships. These are just the students that we know of. Our students’ success may be better; however we don’t have the information. It is difficult to track students.

4. Program modification - No program modifications are being considered at this time based on this data.

STRENGTHS AND WEAKNESSES OF THE PROGRAM

The results of the assessment also indicate that the students are doing well on oral and written communication skills as well as being able to use the library and computer. In regards to demonstrating knowledge of biological concepts the results indicate our average student scores are slightly below the national average on the standardized test in biology (ETS). While it is true the average scores are somewhat low, there are some students that are performing well on the exam. In the greater scheme of things, many of the students are succeeding. They are being accepted into graduate or professional schools. Graduate and professional schools would be the stakeholders for our program. The program is succeeding in satisfying the interests of these stakeholders because our students are being accepted into the programs. We had a faculty representative at the OU Health Sciences Center Counselor Workshop to keep apprised of the prerequisite and suggested coursework for the professional programs. Our program provides appropriate course work for the students to be accepted into these programs. Several of the students who do get into these programs have communicated to the faculty that they feel that the education that they received at Southeastern has prepared them well for the next level. Some students in professional school have indicated that they felt that they were more prepared in the biology classes than many of their classmates. In the exit survey (see appendix) 90% of the students rated their satisfaction with the program as excellent (55%) or more than adequate (35%).

Unfortunately there are some students that are performing very poorly on the ETS exam. It seems in the opinion of several faculty members, that the quality of the entering students is going down. If the students are entering at a lower level, it would be more difficult to reach national levels at the end of the program. It is also difficult to determine whether the students are really not learning the information or if this represents a lack of effort on the exam. The students are not very motivated to do well on this exam. It does not have a great impact on their grade for the class or their ability to graduate. Thus, while some of our graduates are successful, the numbers of successes seem to be low.
PREVIOUS MODIFICATIONS MADE IN THE PROGRAM

We modified the program in Fall 2003 with a new sequence of introductory biology classes. This year most of the graduates had Principles of Biology I and II rather than General Zoology and General Botany; although some students had Principles of Biology and General Zoology or transferred in with General Zoology and General Botany. We are hopeful that Principles of Biology I and II will give the students a firmer ground in the basic biological principles for the upper level courses to build upon. The emphasis of Principles of Biology I is biology on the cellular level. We wanted to give the students a better basis of cellular biology to help them in the upper division courses. Our higher scores on the ETS in the last few years are in the Cell Biology subscores. It appears that we are doing well there. There also has been increases in the Population Biology, Evolution, Ecology subscores which may reflect an emphasis of these subjects in Principles of Biology II. The introduction to these subjects in Principles of Biology II may help students in the upper division classes on these subjects. Based on the assessment results, the department does not plan on making any changes.

ASSESSING IETV AND/OR WEB-BASED INSTRUCTION

The Department offers no IETV courses or web-based courses in the degree program; however, we have offered General Biology (BIOL 1114), a nonmajors general education course, online since Fall 2004. The analysis of the web-based General Biology will be addressed in the General Education Assessment report.

FACULTY INPUT INTO THE ASSESSMENT PROCESS

The faculty primarily involved in the Biology degree program are:

- Dr. Erica Corbett
- Dr. Diane Dixon
- Dr. Teresa Golden
- Dr. Brad Ludrick
- Ms. Helen Petre
- Dr. Stan Rice
- Dr. Judy Williams
- Dr. Doug Wood

All departmental faculty assisted in the development of the assessment plan. In the fall of 2007 the department faculty discussed how the program was being assessed and whether changes needed to be made. The faculty discussed Senior Seminar and how assessment is being done in there. It was in the fall of 2007 that the faculty decided to make a new in-house exam. The
faculty teaching the core courses submitted questions. The questions were gathered and the whole department had input on the approval/modifications of questions. Various faculty members collect data for the assessment report. The department chair collected the data and wrote the report. The faculty members of the department have the opportunity to review/edit the assessment report. Listed below are specific duties of faculty members:

1. ETS Major Field Test in Biology given by Drs. Williams, Golden and Rice. Analyzed by Dr. Dixon.
2. In-House Program exam in Principles of Biology I given by Ms. Petre, Dr. Williams, Dr. Wood and also given in Senior Seminar given by Drs. Williams, Golden and Rice. Analyzed by Dr. Ludrick.
3. Writing Assignments and Oral Presentations in Senior Seminar evaluated by Drs. Williams, Golden and Rice.
4. Senior Seminar’s (Capstone Course) content designed by all departmental faculty and taught by Drs. Williams, Golden and Rice.
5. Exit Survey is given to graduating seniors in Senior Seminar by Drs. Williams, Golden and Rice. Analyzed by Dr. Dixon.
6. Writing Assignments and Oral Presentation in Ecology evaluated by Dr. Corbett.
7. Feedback of placement of graduates - all departmental faculty
Appendix I--Exit Questionnaire for Biology Majors (n = 20)

1. This question identified the student's major.
2. What is your approximate undergraduate grade point average?
   A. 3.60-4.00 (15%)  B. 3.20-3.59 (55%)  C. 2.80-3.19 (20%)  D. 2.40-2.79 (5%)  E. 2.00-2.39 (0%)
3. What is your approximate grade point average in your major?
   A. 3.60-4.00 (25%)  B. 3.20-3.59 (40%)  C. 2.80-3.19 (25%)  D. 2.40-2.79 (5%)  E. 2.00-2.39 (5%)
4. What is your gender?
   A. Female (70%)  B. Male (30%)
5. What is your ethnicity (you do not have to respond to this question)?
   A. African American (0%)  B. Caucasian (80%)  C. Hispanic (0%)  D. Native American (20%)  E. Other minority (0%)
6. Did you complete your entire undergraduate education at Southeastern Oklahoma State University?
   A. Yes (60%)  B. No (40%)
7. Overall, how well did syllabi for courses in the program reflect the objectives of each course?
   A. Very Well (55%)  B. Well (25%)  C. Adequately (20%)  D. Poorly (0%)  E. Not at all (0%)
8. Overall, how well did syllabi of courses in the program reflect grading policies of each course?
   A. Very Well (65%)  B. Well (25%)  C. Adequately (10%)  D. Poorly (0%)  E. Not at all (0%)
9. Overall, how well did syllabi of courses in the program reflect attendance policies of each course?
   A. Very Well (60%)  B. Well (25%)  C. Adequately (10%)  D. Poorly (0%)  E. Not at all (0%)
10. About how many papers (~5 typed pages + literature cited) did you have to write in courses taken in the program?
    A. 0 (0%)  B. 1 (5%)  C. 2 (10%)  D. 3 (30%)  E. 4 or more (55%)
11. About how many other writing assignments (< 5 typed pages) did you have to write in courses taken in the program?
    A. 0 (0%)  B. 1 (0%)  C. 2 (15%)  D. 3 (15%)  E. 4 or more (70%)
12. About how many oral/poster presentations did you have to give by yourself in courses taken in the program?
    A. 0 (5%)  B. 1 (5%)  C. 2 (45%)  D. 3 (15%)  E. 4 or more (35%)
13. About how many oral/poster presentations did you have to give with others in courses taken in the program?
    A. 0 (45%)  B. 1 (20%)  C. 2 (15%)  D. 3 (10%)  E. 4 or more (10%)
14. About how many oral/poster presentations did you give at state, regional, or national professional meetings?
    A. 0 (65%)  B. 1 (10%)  C. 2 (0%)  D. 3 (0%)  E. 4 or more (5%)
15. About how many field trips did you take in courses taken in the program?
    A. 0 (30%)  B. 1 (10%)  C. 2 (10%)  D. 3 (20%)  E. 4 or more (30%)
16. About how many outside speakers gave presentations to classes that you completed in the program?
    A. 0 (10%)  B. 1 (20%)  C. 2 (10%)  D. 3 (30%)  E. 4 or more (30%)
17. Were you provided information concerning safe laboratory procedures in courses taken in the program?
    A. Exceptional (75%)  B. More than Adequate (15%)  C. Adequate (10%)  D. Some (0%)  E. Not at all (0%)
18. Were you provided information concerning safe operating procedures in the field?
    A. Exceptional (60%)  B. More than Adequate (20%)  C. Adequate (15%)  D. Some (5%)  E. Not at all (0%)
19. Overall, how would you rate the quality of the program you completed?
    A. Excellent (55%)  B. More than Adequate (30%)  C. Adequate (10%)  D. Fair (5%)  E. Poor (0%)
20. Overall, how would you rate the lecture portion of the classes you completed in the program?
    A. Excellent (45%)  B. More than Adequate (45%)  C. Adequate (5%)  D. Fair (5%)  E. Poor (0%)
21. Overall, how would you rate the laboratory portion of the classes you completed in the program?
    A. Excellent (45%)  B. More than Adequate (45%)  C. Adequate (5%)  D. Fair (5%)  E. Poor (0%)
22. Overall, how would you rate the use of educational technology by professors in the program?
    A. Excellent (40%)  B. More than Adequate (45%)  C. Adequate (15%)  D. Fair (0%)  E. Poor (0%)
23. Overall, how would you rate the laboratory facilities in the program?
    A. Excellent (35%)  B. More than Adequate (30%)  C. Adequate (25%)  D. Fair (5%)  E. Poor (5%)

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24. Overall, how would you rate the lecture facilities in the program?
   A. Excellent (35%)  B. More than Adequate (45%)  C. Adequate (20%)  D. Fair (0%)  E. Poor (0%)

25. This question was left blank on the Scan-tron form.

26. Overall, how would you rate the number of students in classes in the program?
   A. Way too few (0%)  B. Too few (5%)  C. About right (95%)  D. Too Many (0%)  E. Way too many (0%)

27. Overall, how would you rate the number of students in the program?
   A. Way too few (0%)  B. Too few (5%)  C. About right (95%)  D. Too Many (0%)  E. Way too many (0%)

28. Overall, how would you rate the qualifications of faculty in the program?
   A. Excellent (65%)  B. More than Adequate (30%)  C. Adequate (5%)  D. Fair (0%)  E. Poor (0%)

29. Overall, how would you rate the quality of instruction in the program?
   A. Excellent (50%)  B. More than Adequate (35%)  C. Adequate (15%)  D. Fair (0%)  E. Poor (0%)

30. Overall, how would you rate your satisfaction with the program you completed?
   A. Excellent (55%)  B. More than Adequate (35%)  C. Adequate (5%)  D. Fair (5%)  E. Poor (0%)

31. Overall, how would you rate the concern of program faculty for students?
   A. Excellent (35%)  B. More than Adequate (35%)  C. Adequate (20%)  D. Fair (10%)  E. Poor (0%)

32. Overall, how would you rate curricular/academic advising provided by faculty in the program?
   A. Excellent (45%)  B. More than Adequate (40%)  C. Adequate (15%)  D. Fair (0%)  E. Poor (0%)

33. Overall, how would you rate the career advising provided by the faculty in the program?
   A. Excellent (45%)  B. More than Adequate (30%)  C. Adequate (20%)  D. Fair (5%)  E. Poor (0%)

The following questions only refer to courses in your major program.

34. What was your favorite course?
   Human Anatomy (5), Microbiology (5), Genetics (3), Principles of Biology II (2), Immunology (2), Bioethics, Molecular Genetics, Cell & Molecular Biology, Mammalogy, Evolution, Ornithology

35. What was your least favorite course?
   Ecology (5), Botany (3), Cell and Molecular Biology (2), Microbiology, Biostatistics, Principles of Biology I, Principles of Biology II, Physiology, Immunology, Evolution, Ichthyology

36. What was your most difficult course?
   Human Anatomy (4), Human Physiology (4), Microbiology (3), Cell and Molecular Biology (2), Immunology (2), Herpetology, Ichthyology

37. What was your least difficult course?
   Principles of Biology I (4), Ecology (3), Evolution (2), Principles of Biology II (2), Genetics (2), Bioethics (2), Human Disease, General Zoology, Anatomy, Conservation of Natural Resources
SIGNATURES:

Chair, Department of Biological Sciences

Dean, School of Arts and Sciences

Date

Date

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SEP 9 8 2010

Dean’s Office
School of Arts & Sciences