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## VBMS 403: Integrated Principles and Prevention of Livestock Diseases

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**VBMS 403: Integrated Principles and  
Prevention of Livestock Diseases**  
**A Peer Review of Teaching Project Benchmark Portfolio**  
**2020-2021**

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## **Abstract**

This portfolio documents the teaching objectives, strategies, assessments, and changes implemented for VBMS 403: *Integrated Principles and Prevention of Livestock Diseases*, an Achievement-Centered Education (ACE) 10 Capstone course taught during the Spring Semester through the School of Veterinary Medicine and Biomedical Sciences at the University of Nebraska-Lincoln. Teaching methods and course activities included traditional lecturing with quizzes and examinations, in-class discussions, short reading assignments, and the generation of a scholarly term paper demonstrating broad knowledge, technical proficiency, information collection, synthesis, interpretation, and presentation. This portfolio documents the qualitative and quantitative methods used to assess the course learning objectives (goals). My participation in the Peer Review of Teaching Project was aimed at improving as an instructor in the classroom, demonstrating my commitment to my position and gaining a better understanding of pedagogy. The information and instruction gained by the preparation of this benchmark portfolio was valuable and will be used in my other courses.

**Keywords:** Integrative Principles and Prevention of Livestock Diseases; Assessment of Student Learning; Benchmark Portfolio

## Objectives of the Course Portfolio

This portfolio was completed as part of a year-long Peer Review of Teaching Project at the University of Nebraska-Lincoln, 2020-2021 (<https://peerreview.unl.edu>). The project provides a model for documenting, assessing, and making teaching and the student's learning visible through the development of a course portfolio. During the year, participants interacted through workshops, writing retreats, small group discussion with peers, and had general discussions about pedagogy. This portfolio provided me with an opportunity to evaluate my approach to student learning, understand how to make learning more effective, and identify areas where improvement can be made.

## Description of the Course

Integrated Principles and Prevention of Livestock Diseases (VBMS 403) is a four-credit Achievement-Centered Education (ACE) 10 Capstone course in the School of Veterinary Medicine and Biomedical Sciences (see *Appendix A*). The course is designed to describe the relationship of management practices to the control of diseases affecting livestock. In addition, the course emphasizes the integration of management techniques in the control of metabolic, infectious, and parasitic diseases of livestock and understanding the importance of disease in livestock production. Current issues involving management practices to enhance animal well-being, to control livestock diseases, and to ensure food safety are examined. To satisfy the ACE 10 Learning Outcome for the course, students are to generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation and reflection. Opportunities to demonstrate this outcome include class discussions, the preparation of a scholarly paper and the presentation of the paper in class.

This course is required for Veterinary Science and Veterinary Technology majors and satisfies the ACE 10 requirement. The course meets face-to-face on Monday, Wednesday, and Friday for 50-minute lectures. An additional Wednesday meeting for 50 minutes is designed for the development of the scholarly paper and its presentation to the class. Students taking this course are typically Veterinary Science and Veterinary Technology majors in their final year of study. The students are generally high achievers with many planning on continuing their education in veterinary school.

## Course Goals and Learning Outcomes

The overall course goal is to introduce students to livestock management practices and the diseases encountered in livestock. At the completion of the course, students will be able to identify resources and be able to discuss current topics of importance to the livestock industry.

The **learning objectives (goals)** for the course include:

1. Upon completion of the course, by knowing normal animal behavior students should be able to recognize when an animal or group of animals is sick by assessing production losses, noting clinical signs, and conveying this information to the attending veterinarian.

2. Upon completion of the course, students should understand how management practices and environmental factors influence disease development within a herd/flock and be able to implement changes in management practices to minimize losses caused by disease, confinement, and handling of animals.
3. Upon completion of the course, students will be able to understand the properties of the innate and adaptive immune systems involved in the pathogenesis of animal disease.
4. Upon completion of the course, students will be able to demonstrate an understanding of non-infectious and infectious causes of disease, which include nutritional imbalances, toxins, internal/external parasites, viruses, bacteria, and fungi.
5. At the end of the course, students will generate a scholarly product requiring broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation, and reflection. This outcome will be demonstrated by the preparation of a scholarly paper and presentation of the paper to the class.

## **Course Enrollment**

Due to COVID-19 restrictions, the enrollment for VBMS 403 Spring 2021 was restricted to 15 students. There were 13 students enrolled in the course. All students were classified as Seniors. Ten students were Veterinary Science majors and two students were Veterinary Technology majors. The average age of the students was 21.4 years (Range 20-23 years). Twelve students identified as female and one student identified as male.

## **Teaching Methods/Course Materials/Course Activities**

The course utilized a variety of teaching methods including lectures, discussions, short reading assignments, quizzes/examinations, peer review assignments, oral presentations, and the writing of a scholarly paper.

### ***Lectures***

The recommended textbook for the course is *Keeping Livestock Healthy* by N. Bruce Hayne D.V.M., 4<sup>th</sup> Edition. There are no required readings from the textbook, but instead the textbook is meant to be a source for the student if further clarification of lecture material is needed. In-class lecture PowerPoint slides and other course-related items were posted on canvas.

### ***Discussions***

To encourage student interaction and conversation, I incorporated a 10-minute discussion period five times during the semester. For the discussion, I selected an animal agriculture-related image, and without prompts, asked the students what they thought about the image. The images I selected could elicit multiple viewpoints depending on the student's perception. After the discussion, I would provide the students with information concerning the image.

### ***Short Reading Assignments***

To reinforce topics discussed in class and to expand their knowledge of animal agriculture, I incorporated into the course an activity called ‘What’s in the news’. Four times during the semester, I assigned the students a link to an agriculture-related magazine and had them select an article to review. The articles in the magazines were very short, with some articles only a couple of paragraphs in length. The required review consisted of a short summary of the article and why they chose that article. The time required outside of class to complete this assignment was anticipated to be minimal.

### ***Quizzes and Examinations***

Three quizzes and four exams were used as summative assessments. A quiz was administered one week prior to each exam, except for the Final exam (Exam 4). Each quiz was worth 10 points and consisted of multiple choice and true/false questions. Each exam was worth 100 points and consisted of multiple choice, true/false and short answer questions covering material from the previous exam. The final exam, administered during finals week, was comprehensive.

### ***Peer Review and Paper***

To satisfy the ACE 10 Learning Outcome for the course, students are to generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation and reflection. To demonstrate learning for this outcome, students prepare a scholarly paper and present the paper to the class in the form of a PowerPoint presentation (see *Oral Presentations* below). The subject of the report is selected by the student and approved by the instructor, but the topic must deal with a current controversial issue pertaining to the health and well-being of livestock (see *Appendix B*).

To encourage the preparation of a well-written scholarly paper and discourage procrastination, three student peer-reviewed assignments were incorporated into the course. The student peer review feedback was completed on the term paper in three stages: 1) Title, Keywords and Introduction; 2) Title, Keywords, Introduction and Discussion and 3) Completed paper. Each paper or portion thereof was assigned to two students in a randomized manner for review. Student were allowed one week to complete reviews. Prior to the peer-review feedback assignments, we discussed and practiced peer review in class. The final term report is to be supported by a minimum of three reference articles from peer-reviewed journals, published within the last three years and consist of 10-20 typewritten, double-spaced pages and graded by the instructor using a rubric (Appendix C). At the end of the semester, the students were given a peer-review feedback survey to evaluate their perception of the project (see *Appendix D*).

### ***Oral Presentations***

Students prepare and present an oral introduction of the term paper during the first four weeks of class. The introduction consists of a title, introductory statement, background, statement of the controversial issue and a list of current references. The final term paper is

presented in the form of an oral PowerPoint presentation during the last two weeks of the semester. The presentation is required to be a minimum of 20 minutes in length and presented in a scholarly manner supported by visual aids. Students score the oral presentations using a rubric (see *Appendix E*).

## Analysis of Student Learning

### *General Assessment: Pre- and Post-Semester Exams*

An on-line pre-semester exam consisting of 20 one-point questions (16 multiple choice and four true/false) was administered on the first day of class and then the same exam was given on the last day of class, unannounced. Students were given 15 minutes to complete the exam. The questions were derived from past exams. Table 1 summarizes student performance on these exams.

Exam	N	Average*	Range	Std. Dev.	Ave. Time for Completion
Pre-Semester	13	59%	40%-80%	2.11	5 min. 43 sec.
Post-Semester	13	85%	70%-100%	1.88	4 min. 31 sec.
*Student t-Test: Paired Two Sample for Means $p < 0.05$					

**Table 1:** Pre- and Post-Semester Exam Data

Based on the results of the pre- and post-semester exams, students met the learning objectives one through four. The class average on the pre-semester exam was 59%, while on the post-semester exam the class average significantly ( $p < 0.05$ ) increased to 85%, clearly demonstrating an increase in understanding of the course material.

### *General Assessment: Quizzes and Examinations*

A 10-point quiz was administered one week before each of the first three exams. The timing of the quizzes one week before the exam was to encourage students to start reviewing material. The quizzes consisted of multiple choice and true/false questions. Table 2 summarizes student performance on the quizzes. There was no significant difference between average quiz grades.

Quiz	N	Average*	Range	Std. Dev.	Ave. Time for Completion
1	13	95% <sup>a</sup>	90%-100%	0.50	2 min. 54 sec.
2	13	88% <sup>a</sup>	70%-100%	0.97	3 min. 01 sec.
3	13	95% <sup>a</sup>	80%-100%	0.84	2 min. 21 sec.
*Student t-Test: Paired Two Sample for Means, $p < 0.05$					

**Table 2:** Student Performance on Quizzes. Different superscript letters indicate significant difference ( $p < 0.05$ ) as assessed using the Student t-Test.

Four exams were administered throughout the semester, roughly distributed at monthly intervals. Each exam was worth 100 points. The exams consisted of multiple choice and



true/false questions, with Exam 2 also having short answer questions. Exams 1-3 each covered material from the previous exam and Exam 4 was a comprehensive exam. Table 3 summarizes student performance on the exams. The average quiz grade correlated well with the average exam grade.

Exam	N	Average*	Range	Std. Dev.	Ave. Time for Completion
1	13	91% <sup>a</sup>	83%-96%	3.45	22 min. 28 sec.
2	13	86% <sup>b</sup>	72%-96%	6.26	24 min. 05 sec.
3	13	91% <sup>a</sup>	77%-98%	5.99	24 min. 23 sec.
4	13	82% <sup>c</sup>	69%-91%	6.38	25 min. 21 sec.
*Student t-Test: Paired Two Sample for Means, $p < 0.05$					

**Table 3:** Student Performance on Exams. Different superscript letters indicate significant difference ( $p < 0.05$ ) as assessed using the Student t-Test.

While not a focus of the portfolio, I decided to evaluate each exam question in terms of question difficulty and discrimination value. One reason for this evaluation was to address the validity of a student comment collected at the end of the course:

*“In terms of the exams, I felt like it was helpful when we knew what the structure looked like. For example, I think a lot of people got blindsided by essay questions being on the exam. Although they were fair questions, essay questions do require a different form of studying”.*

Questions in which greater than 80% of the students answered correctly were considered easy questions. Those questions answered correctly by 50%-80% of the students were considered medium in difficulty, while those answered correctly by less than 50% of the students were considered hard questions. The discrimination index is an indicator of whether a question accurately determines the student’s mastery of the concept. A discrimination index greater than 0.3 is considered good, while a discrimination index of 0.1-0.3 is considered fair. A discrimination index below 0.1 is poor. A discrimination index is not calculable for questions where all the students either answered it correctly or incorrectly.

Table 4 summarizes the question difficulty, discrimination index and number of questions in each category for each of the four exams. Questions with a poor discrimination index, regardless of difficulty, accounted for an average of 17.5% of the exam questions (range 8%-22%). These are questions that need to be re-evaluated and either adjusted to improve the discrimination index or deleted. Questions where a discrimination index was not calculable accounted for an average of 45% (range 33%-60%) of the exam questions. All of these questions were categorized as having an easy difficulty level except for one question that categorized as a medium difficulty. An average of 38% of the exam questions (range 21%-46%) were categorized as good or fair, regardless of difficulty.

Question Difficulty (% Responded Correctly)/ Discrimination Value (N = Number of questions)	Exam 1	Exam 2	Exam 3	Exam 4
Easy (%) / Good	92.3/0.567 (N = 2)	86.8/0.479 (N = 6)	90.2/0.592 (N = 11)	91.0/0.504 (N = 9)
Easy (%) / Fair	88.5/0.184 (N = 2)	91.7/0.242 (N = 6)	89.2/0.202 (N = 5)	91.0/0.191 (N = 10)
Easy (%) / Poor	90.4/-0.124 (N = 8)	89.4/-0.015 (N = 8)	89.7/-0.091 (N = 4)	90.0/-0.037 (N = 7)
Easy (%) / None	100.0/ - ---- (N = 40)	100.0/ - ---- (N = 14)	100/ - ---- (N = 35)	100/ - ---- (N = 27)
Medium (%) / Good	72.3/0.639 (N = 5)	71.1/0.495 (N = 4)	61.5/0.500 (N = 5)	68.0/0.596 (N = 6)
Medium (%) / Fair	75/0.205 (N = 4)	66.7/0.219 (N = 3)	69.2/0.285 (N = 2)	63.0/0.160 (N = 6)
Medium (%) / Poor	71.1/0.084 (N = 4)	73.1/-0.019 (N = 2)	69.2/-0.415 (N = 1)	70.0/-0.094 (N = 7)
Medium (%) / None	NA (N = 0)	61.5/ - ---- (N = 1)	NA (N = 0)	NA (N = 0)
Hard (%) / Good	46.1/0.375 (N = 1)	38.5/0.536 (N = 2)	NA (N = 0)	29.0/0.578 (N = 4)
Hard (%) / Fair	NA (N = 0)	NA (N = 0)	42.0/0.215 (N = 2)	46.0/0.116 (N = 2)
Hard (%) / Poor	46.0/0.017 (N = 1)	NA (N = 0)	NA (N = 0)	38.0/-0.234 (N = 3)
Hard (%) / None	NA (N = 0)	NA (N = 0)	NA (N = 0)	NA (N = 0)

**Table 4:** Question Difficulty and Discrimination Indices for Semester Exam Questions.

Exams consisted of multiple choice and true/false questions. Short answer questions were also included on Exam 2. To address the student comment above and determine if the short answer questions on the second exam accounted, in part, for the significant decrease in average class grade for this exam, a comparison of question difficulty and discrimination indices between the short answer questions and the remainder of the exam was evaluated. There were five short answer questions out of 46 total questions, and they counted for 19 of the 100 points possible on the exam. Three of the short answer questions were considered easy (>80% answered correctly), while two of the questions were considered medium (50%-80% answered correctly). The discrimination index was good (>0.3) on three of the questions, fair (0.1-0.3) on one question and not calculable for one question as none of the students received full credit for the question. Based upon the average percent of students answering correctly on the short answer questions (83%) compared to the remainder of the exam (86%), the degree of difficulty for both the short answer questions and the remainder of the exam was determined to be easy (> 80%), with the discrimination index for the short answer questions good (0.4), compared to fair on the remainder of the exam (0.2). Based on this data, the short answer questions did not contribute to the lower performance on Exam 2 as suggested by the student comment.

### ***General Assessment: Retention of Student Learning***

To evaluate the student's retention of course material, the number of correct responses on Final exam questions were compared to the correct responses for those questions when asked on a previous exam. A total of 24 questions were included on the final exam, that had been asked on previous exams (Exam 1, N = 6; Exam 2, N = 5; Exam 3, N = 13). Table 5 summarizes the results. There was no significant difference ( $p = 0.26$ ) between the number of students that answered the questions correctly on the previous exams compared to the Final exam, supporting the retention of student learning.

	Other Exams	Final Exam	<i>p</i> value
<b>Mean</b>	11.7	11.2	$p = 0.26$
Student t-Test: Paired Two Sample for Means, $p < 0.05$			

**Table 5:** A Comparison of Correct Answers for Questions asked on Exams and again on the Final Exam to Evaluate the Retention of Student Learning.

### ***Assessment of Short Reading Assignments***

New for this semester was an activity called ‘What’s in the news’. The purpose of this activity was to re-enforce topics discussed in class and introduce them to other topics related to animal agriculture. Four times during the semester, I provided students with a link to an agriculture-related magazine such as Bovine Veterinarian, Dairy Herd Management, Drovers and Animal Health SmartBrief. Students selected an article to review. These articles tend to be very short, with some only a couple of paragraphs in length. The student’s review of the article was to consist of a short summary and why they chose that article. The time required outside of class to complete this assignment was anticipated to be minimal. Each of the reviews were worth five points. At the end of the semester, I asked the students to reflect on the newly introduced semester assignments. Ten of the thirteen students commented on the short reading assignments. All of students liked the ‘What’s in the news’ assignments and thought that they were enjoyable and contributed to their knowledge about animal agriculture. Examples of student responses:

*“I enjoyed reading magazines or short news articles and writing a summary of the chosen news. My goal is to work in the infectious diseases epidemiology department; hence, learning about emerging diseases or current infectious diseases is extremely important. Thus, reading through these magazines was beneficial.”*

*“I liked the “What’s in the News” assignments, as it allowed me to learn about current events in a specific area of veterinary medicine that I was interested in.”*

*“I thoroughly enjoyed the News assignments because it felt like we were able to write about something we enjoyed reading. It didn’t feel as much of an assignment, it felt more like an inquiry into what was happening currently.”*

*“I liked the “What’s in the News” assignments because they were easy points and they were usually interesting to me.”*

*“The “What’s in the News” assignments were a unique way for us to learn about a specific aspect of production medicine, and I would recommend they are kept in the future.”*

*“I think the “What’s in the News Assignments” were a nice little extra 5-point gimme that also allowed us to gain exposure to more modern available journals. I found them super simple to accomplish and interesting to learn something new or connect it to something that we discussed in class.”*

*“The news assignments provided a good way to keep in touch with recent news surrounding large animals and farming.”*

*“The news assignments were fun, in my opinion. Most of the articles in those journals were rather short and easy to read.”*

*“The News assignments were also interesting to me, especially when I read articles from the perspective of the producer, since I have never been exposed to that part of the industry before.”*

*“I also liked the journal-reading assignments too, but some of them were more producer-focused and not medicine-focused, which I would have preferred to read about.”*

### **Assessment of Learning Objective 5**

#### **Peer Review of Term Papers**

I introduced peer-review assignments this year to encourage the preparation of a well-written, scholarly term paper and discourage procrastination by incorporating three student peer-review assignments into the course (Kelly, 2015; Marcoulides and Simkin, 1991; Sims, 1989). The student peer-review feedback was completed on the term paper for three stages: 1) Title, Keywords, and Introduction; 2) Title, Keywords, Introduction and Discussion and 3) Completed paper. Each paper or portion thereof was assigned to two students in a randomized manner for review. Students were allowed one week to complete their assigned reviews. At the end of the semester, I had the students complete a Likert-scale type questionnaire about their perception of the peer-review process and reflect on the peer-review assignments in their reflection statement (Lu, 2016). Table 6 summarizes the results of the Likert-scale peer-review questionnaire. The survey was divided into: Part 1, Satisfaction with the Peer Review sessions and Part 2, Satisfaction of Giving and Receiving Feedback. Each part had two sets of questions. Both sets of questions were scored using a scale of 1 to 5. For one set of questions the scale was 1 indicating ‘Strongly disagree’ and 5 ‘Strongly agree’. For the other set of questions, 1 indicated ‘Almost never’ and 5 indicated ‘Almost always’.

For discussion purposes, strongly agree, agree, almost always, always were considered responses in agreement for each item while neutral, never, almost never, disagree and strongly disagree were not. The majority of the student’s felt that the peer review sessions were helpful in improving their writing skills (77%), writing clear argumentative/controversial statements (92%), writing a better paper (92%), developing the content of the paper (85%), improving their paper (92%), and organizing their paper (69%). In addition, students thought that the peer review assignments encouraged them to complete the paper on time (77%), encouraged them to do their best work (69%) and use better sentences in their papers (85%). In contrast, the students did not think the peer review sessions were useful for improving vocabulary (54%), learning about grammar (85%), improving or correcting grammar in the paper (53%, 54% respectively), nor correcting spelling errors (69%).

With regards to the giving and receiving feedback, the majority of the students enjoyed giving (77%) and receiving (76%) feedback. Student’s thought that the giving feedback (69%,

61%) and receiving (92%, 76%) feedback helped them write and organize their paper, respectively. In contrast, the majority of students did not look forward to the peer-review assignments (70%) and the process of giving (85%, 84%) and receiving (53%, 54%) feedback did not help improve vocabulary nor grammar in their paper, respectively.

The last part of the questionnaire surveyed the student's comfort at receiving and giving feedback, especially if the comments were negative. The majority of the students felt comfortable giving (54%) negative feedback and did not dislike receiving (92%) negative feedback. All students were comfortable with giving (100%) positive feedback to their peers and liked (100%) receiving positive feedback on their paper. Students did not dislike giving negative feedback (69%) and did not feel uncomfortable (85%) when they received negative comments. Students liked (92%) and enjoyed (77%) giving positive comments to their peers. They also enjoyed receiving (92%) positive feedback from their peers and felt proud (85%) when they received the positive feedback. When reviewing peer's papers, the majority of the students did not avoid (70%) giving negative feedback if needed and were ok if they received (83%) negative feedback on their paper.

Overall, the students thought the peer-review process was useful in writing a better, more organized and thorough paper and prevented procrastination, despite not liking the assignments. It stands to reason that positive feedback is more easily given and received with peer-review and that was indicated by the student's responses, however, the students did not appear apprehensive about giving and receiving negative feedback either. Students did not feel that the peer-review process helped with grammar nor vocabulary.

Survey Questions							
Part 1. Satisfaction with the Peer Review Sessions							
	Average	Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)	Total
The peer review comments/assignments were useful for improving my writing skills.	4.00	31%	46%	15%	8%	0%	100%
The peer review comments/assignments helped me write clear argumentative/controversial statements.	4.15	23%	69%	8%	0%	0%	100%
The peer review comments/assignments were useful for writing a better paper.	4.38	46%	46%	8%	0%	0%	100%
The peer review comments/assignments helped me develop content in my paper.	4.08	31%	54%	8%	8%	0%	100%
The peer review comments/assignments helped me improve my paper.	4.31	38%	54%	8%	0%	0%	100%
The peer review comments/assignments helped me better organize my paper.	3.92	38%	31%	15%	15%	0%	100%
	Average	Almost always (5)	Always (4)	Neutral (3)	Never (2)	Almost never (1)	Total
The peer review comments/assignments prepared me to complete the paper on time.	4.15	23%	54%	8%	0%	15%	100%
The peer review comments/assignments helped me use better vocabulary in my paper.	3.15	23%	23%	8%	8%	38%	100%
The peer review comments/assignments helped me learn more about grammar.	2.54	15%	0%	31%	8%	46%	100%
The peer review comments/assignments made me want to produce my best work.	3.85	38%	31%	23%	8%	0%	100%
The peer review comments/assignments helped me use better sentences in my paper.	4.15	54%	31%	15%	0%	0%	100%
The peer review comments/assignments made me improve grammar in my paper.	3.31	23%	23%	15%	0%	38%	100%
The peer review comments/assignments helped me correct grammar mistakes.	3.15	31%	15%	8%	0%	46%	100%
The peer review sessions helped me correct spelling errors in my essays.	2.54	23%	8%	0%	15%	54%	100%
Part 2. Satisfaction of Giving and Receiving Feedback							
	Average	Almost always (5)	Always (4)	Neutral (3)	Never (2)	Almost never (1)	Total
I enjoyed giving my classmates feedback on their papers.	4.23	23%	54%	15%	0%	8%	100%
Giving feedback helped me write better statements in my paper.	4.00	15%	54%	8%	0%	23%	100%
Receiving feedback helped me write better statements in my paper.	4.23	54%	38%	0%	0%	8%	100%
I enjoyed receiving feedback from my peers on my paper.	4.00	38%	38%	8%	0%	15%	100%
Giving feedback helped me organize my paper better.	3.85	15%	46%	15%	0%	23%	100%
Receiving feedback helped me organize my paper better.	3.92	38%	38%	8%	8%	8%	100%
I looked forward to the peer review comments/assignments.	3.38	0%	31%	54%	8%	8%	100%
Giving feedback helped me improve vocabulary in my paper.	2.46	8%	8%	31%	23%	31%	100%
Receiving feedback helped me improve vocabulary in my paper.	3.38	8%	38%	23%	15%	15%	100%
Giving feedback helped me use better grammar in my paper.	2.62	0%	15%	31%	15%	38%	100%
Receiving feedback helped me use better grammar in my paper.	3.15	23%	23%	8%	8%	38%	100%
	Average	Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)	Total
I felt uncomfortable giving negative feedback to my peers.	3.00	15%	31%	0%	46%	8%	100%
I felt comfortable giving positive feedback to my peers.	4.38	38%	62%	0%	0%	0%	100%
I did not like receiving negative feedback on my paper.	2.00	0%	8%	15%	46%	31%	100%
I liked receiving positive feedback on my paper.	4.46	46%	54%	0%	0%	0%	100%
I did not like giving negative feedback on my peer's papers.	2.77	8%	23%	15%	46%	8%	100%
I liked giving positive comments on my peer's papers.	4.31	38%	54%	8%	0%	0%	100%
I felt uncomfortable receiving negative comments on my paper.	2.38	0%	15%	31%	31%	23%	100%
I felt proud when I received positive comments on my paper.	4.31	54%	31%	8%	8%	0%	100%
I avoided giving negative comments to my peers.	2.38	0%	31%	8%	31%	31%	100%
I enjoyed giving positive feedback to my peer's writing.	4.08	31%	46%	23%	0%	0%	100%
I did not enjoy receiving negative comments on my paper.	2.58	0%	17%	33%	42%	8%	100%
I enjoyed receiving positive feedback from my peers.	4.31	38%	54%	8%	0%	0%	100%

**Table 6:** Likert-item Questionnaire Evaluating Satisfaction with the Peer-review Sessions and Giving and Receiving Feedback (adapted from Joan Lu, 2016). Percentages were rounded to the nearest whole number.

At the end of the semester, in addition to completing the Likert-type questionnaire, the students were asked to reflect on the newly introduced assignments, especially the peer-review assignments. The student's responses covered the entire spectrum from a not helpful to very helpful. Two students thought that the peer-review process was not very useful, although one did think it helped with time management.

*"I found the peer review aspect to be repetitive and less than helpful."*

*"I think that peer-review process was helpful, but overall, I did not think it was super beneficial except that the deadlines forced me to continue working on this paper throughout the semester instead of procrastinating."*

Two students found the peer-review process very time consuming, but thought the assignments were useful and suggested some modifications.

*"The peer review process was very time consuming. In my opinion, I think the last peer review, with the entire paper, should be kept and the rest of the peer reviews should be taken out."*

*"Overall, I wasn't a huge fan of the peer-review process, but that is only because it was time-consuming. However, I would continue to keep it as a part of the class schedule. It was genuinely helpful for classmates to read and add comments on the papers. I would say my classmates gave me many good ideas in the peer reviews, and I think it helped my paper grow a lot."*

The majority of the students thought the peer-review process was beneficial in helping them write a better paper and preventing them from procrastinating.

*"I enjoyed the peer review process because I had the opportunity to read about other controversial topics I didn't know existed. Also, I received excellent constructive comments, which I incorporated into the paper. It was nice to hear other's perspectives."*

*"Additionally, I feel like the peer review process was extremely helpful. I am the type of person to procrastinate to the last minute, so it forced me to start the paper earlier in the semester. Having feedback throughout my writing process was helpful since I often don't realize how weird my sentences sound until someone reads them."*

*"As for this class, I found the peer review process to be very beneficial to me. I have had peer review experiences in the past where I felt like I put more effort into reviewing than other people. However, everybody in this class seemed to genuinely want to make my paper better and gave me lots of helpful advice."*

*"One thing I found particularly helpful were the peer reviews. First, breaking the paper up into several assignments, rather than having it all be due at once, worked well. It prevented procrastination because I could not do the paper all in one night. Even if I did procrastinate, I still had time to do the intro, body, rough draft and final draft. This resulted in a better paper than if I had to do all this right before the deadline. The peer reviews were invaluable, I learned a lot about mistakes I made with my grammar, as well*

*as issues I was having consistently throughout the paper. I am bad at repeating myself, and often mess up my references. Having other students point out these mistakes really helped improve my confidence in my paper. I think the lesson in peer review was helpful, as well in class. I think we all felt more comfortable critiquing and helping one another afterward, and learned not to take it too personally.”*

*“The peer-review process for the papers truly served to make our papers better after each round of reviewing. My paper was made better from the process, so I would recommend utilizing this process in the future as well.”*

*“The way the peer review system was set up was very helpful in creating my final draft of the term paper.”*

*“Ultimately, I found this multi-part peer review process to be extremely helpful as I was formulating my term paper. Even when editing my paper on my own, it was difficult to catch some of the phrases or sentences that made sense to me but may have not been clear to another reader. I have been in a class (in high school) that structured the peer review setup very similarly and it has rarely not been beneficial to me, especially if the students involved are also dedicated and really take the time to give good feedback. I do wish that more classes would use this format because I find it valuable to get feedback during the writing process instead of getting a graded paper back from the professor only to find out there were aspects that could have been fixed before turning it in. I think this structure would set up a lot more students for success and help them to become better writers by trial and error. I also think added and extra peer review opportunity at the end to do a final polished paper once over might be helpful. It did feel minorly cramped at the end with getting the peer views back and then needing to turn around and turn in the paper in less than a week, especially since I was recommended to add some more information, but other than that, I really enjoyed this process.”*

*“I really liked the peer review process and having critiques on my paper that benefited my writing.”*

### ***Peer-review of Oral Presentation***

Students gave two oral presentations during the semester. The first presentation was presented during the fourth week of class. This presentation was limited to five minutes, worth five points and focused on introducing the student’s controversial topic to the class. The second oral presentation was presented during the last two weeks of the semester. It was a presentation of their final term paper and was to be a minimum of 20 minutes in length. The final presentation was worth 70 points and scored by their peers using a rubric with seven categories, each worth a possible 10 points (see *Appendix E*).

## **Summary and Overall Assessment of Portfolio Process**

The Peer Review of Teaching Benchmark Portfolio process of reflecting and documenting my teaching provided me the incentive to really look at the course, implement changes and see what worked or did not work. The process of backward design was a new



concept to me and honestly was out of my comfort zone, but has motivated me to critically look at the other courses that I teach. I thought the development of a portfolio was a valuable tool and I now look forward to implementing it in other courses that I teach. In the following paragraphs I reflect on various aspects of the course that were evaluated in the portfolio.

One of my goals for this course was to have more student interaction in the course, so my plan was to utilize iClickers for imbedded lecture questions and short ten minute discussions about an image on the screen. The use of the iClickers never came to be as there were already technology issues with the classroom. The discussions were not as interactive as I had anticipated. It was difficult to get certain students to participate unless they were specifically called upon. I still want to encourage class participation, so I plan to keep the discussion activity, but may try to utilize the iClickers during this activity.

Based upon student reflections at the end of the course, the 'What's in the News' activity was well received and enjoyed by the students. I think this is a simple activity requiring minimal time commitment and will be kept for future classes.

The major focus of the portfolio was the writing of the term paper and the introduction of the peer review process for improving the quality of the papers. In previous classes, students were to submit a draft of their paper to me for editing and comments. This could be done multiple times if the student chose to take advantage of the process. Unfortunately, the rough drafts were often times 'very rough', and students did not take advantage of the opportunity for me to review and edit their papers. To prevent procrastination and enhance editing opportunities, I introduced the process of peer review for their papers, expecting an increase in the quality of term papers. The peer review process had mixed results. For the most part, the students liked the peer review process and thought that it improved their paper despite being time consuming and it did prevent them from procrastinating. However, I did not see the dramatic improvement in the quality of final term papers as I had anticipated even though I thought that the reviewer's comments were good quality. This was a disappointment, but to navigate this problem, next year I will add an instructor review along with the peer review assignments and re-evaluate the quality of the term papers.

The writing of this portfolio had an unexpected advantage in that it made me look more closely at my examinations and evaluate the quality of my exam questions. After assessing the difficulty level and discrimination index of each question, I found that there are several questions that need to be either eliminated from the exams or improved. I am looking forward to the continuing improvement of this course and will apply the concepts learned to other courses.

## References

Kelly, L., “Effectiveness of Guided Peer review of Student Essays in a Large Undergraduate Biology Course” (2015). *International Journal of Teaching and Learning in Higher Education*. 27 (1), 56-68. <http://www.isetl.org/ijtlhe/>

Lu, J., “Student Attitudes towards Peer Review in University Level English as a Second Language Writing Classes” (2016). *Culminating Projects in English*. 70. [https://repository.stcloudstateedu/engl\\_etds/70](https://repository.stcloudstateedu/engl_etds/70)

Marcoulides, G.A. and M.G. Simkin, “Evaluating student papers: The case for peer review (1991). *Journal of Education for Business*. 67 (2), 80.

Sims, G.K., “Student peer review in the classroom: A teaching and grading tool” (1989). *Journal of Agronomy Education*. 18 (2), 105-108.

## Appendices

### Appendix A: Course Syllabus and Assignments

#### Syllabus

#### Integrated Principles and Prevention of Livestock Diseases

Veterinary Biomedical Sciences 403 (Capstone Course)

4 credits, Spring Semester, 2021

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**Time and Place:** M-W-F 10:00-10:50 a.m. and W 2:00-2:50 p.m.  
Veterinary Medicine and Biomedical Sciences Hall, Room 145

**Course Instructor:** Dr. Christina Topliff  
School of Veterinary Medicine & Biomedical Sciences  
NVDC 115J  
402/472-1480  
E-Mail: [ctopliff2@unl.edu](mailto:ctopliff2@unl.edu)

**Prerequisites:** Animal Science 240 and Biological Sciences 312, Chemistry 251  
or permission of the Instructor.

**Course Description:** This course describes the relationship of management practices to the control of diseases affecting livestock. In addition, the integration of management techniques in the control of metabolic, infectious, and parasitic diseases of livestock and the understanding of the importance of disease in livestock production will be discussed. Current issues involving management practices to enhance animal well-being, to control livestock diseases, and to ensure food safety will be examined.

**\*Attendance:** See 'Class Attendance, Office of the University Registrar' regarding the University policy on attendance. Attendance is expected in all sessions and is **required** at each of the Wednesday afternoon sessions. The instructor must be notified in advance of an absence from class. Students may be excused for special circumstances; however, completion of extra work may be required to compensate for absence from class, especially on the Wednesday afternoon sessions.

**ACE Outcome 10 Assessment:** The ACE 10 Learning Outcome for this course is to generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation and reflection. Opportunities to demonstrate your learning for this outcome will include class discussions, the preparation of a scholarly paper and the presentation of the paper in class.

**Description of writing and speaking assignments:** An introduction/preview of the term paper will be completed and presented orally by each student during the first 4 weeks of class. The introduction/preview consisting of a title, introductory statement, background, statement of the

controversial issue and list of current references will be worth **15 points**. Oral presentation of the Introduction, will be worth **five points**.

The term report, will consist of a written paper and an oral report presented in class. The written paper shall be supported by a **minimum of three** reference articles from peer-reviewed journals, published within the last three years, and shall consist of 10-20 typewritten, double-spaced pages. The written term paper will be worth **100 points**. The oral presentation of the term paper will be a **minimum** of 20 minutes long and presented in a **scholarly manner** supported by visual aids. The oral presentation will be worth **70 points**.

The subject of the report is selected by the student, but the topic must deal with a **currently relevant controversial issue pertaining to the health and well-being of livestock** (e.g. animal welfare, antibiotics, growth hormone, veal calf production, food safety, animal health products, cloning, production livestock management practices, confinement livestock units, etc.) The subject of the abstract is intended to be used as the subject of the term report. The subject of the term report must be approved by the course instructor before the report is developed. The work must be original. Reports prepared for other classes are not acceptable. Written reports and oral presentations will be evaluated and graded on the basis of scholarly content. Peer review will be a component of the evaluation process.

**Evaluation:** There are 800 total points for the semester. Three major tests and a comprehensive final exam given during the semester will be the source of 400 points (100 points each x 4 exams). Quizzes, special assignments and student peer-review will account for an additional 210 points. The writing and speaking assignments for the Wednesday afternoon class will be the source of an additional 190 points. The points for various assignments are as follows:

- Each exam 100 pts x 4 = 400 pts
- Each quiz 10 pts x 3 = 30 pts
- Submission of Paper sections for Review = 50
- Peer Review Assignments = 100 pts
- News Assignments = 20 pts
- Written Introduction of controversial topic = 15 pts
- Oral Introduction of controversial topic = 5 pts
- Oral presentation of final paper = 70 pts
- Written Paper = 100 pts
- Class Participation = 10 pts

**\*5 points will be deducted for each late assignment and each negative remark on Peer Review assignments (this will be discussed later).**

**\*70 points will be deducted for each un-excused absence or for tardiness for each Wednesday afternoon class.**

**Grading:** The grade awarded to each student enrolled in the course will be based upon the **number of points** each has earned during the course of the semester. University grading system, A through F is used in this course. Final grades for the course will be awarded as described in Table 1. **I DO NOT SCALE NOR ROUND UP GRADES.**

Table 1. VBMS 403 Grading System					
Letter Grade	Points Required	Percent total points earned	Letter Grade	Points Required	Percent total points earned
A+	768	≥ 96%	C+	608	≥ 76% but < 80%
A	744	≥ 93% but < 96%	C	584	≥ 73% but < 76%
A-	720	≥ 90% but < 93%	C-	560	≥ 70% but < 73%
B+	688	≥ 86% but < 90%	D+	528	≥ 66% but < 70%
B	664	≥ 83% but < 86%	D	504	≥ 63% but < 66%
B-	640	≥ 80% but < 83%	D-	480	≥ 60% but < 63%
			F	<480	< 60%

***Student Code of Conduct:***

*Students are expected to adhere to guidelines concerning academic dishonesty outlined in the University's Student Code of Conduct, SECTION II: Standards of Academic Integrity and Responsible Conduct, <https://studentconduct.unl.edu/student-code-conduct>.*

**Methods:** Course material will be conveyed through lectures, handouts, reference books, videos, and various publications.

**Recommended Textbook:** *Keeping Livestock Healthy:* 4<sup>th</sup> Edition, 2001. N. Bruce Haynes. Storey Books, North Adams, MA

**Learning Objectives:**

1. Upon completion of the course, by knowing normal animal behavior students should be able to recognize when an animal or group of animals is sick by assessing production losses, noting clinical signs and conveying this information to the attending veterinarian.
2. Upon completion of the course, students should understand how management practices and environmental factors influence disease development within a herd/flock and be able to implement changes in management practices to minimize losses caused by disease, confinement and handling of animals.

3. Upon completion of the course, students will be able to understand the properties of the innate and adaptive immune systems involved in the pathogenesis of animal disease.
4. Upon completion of the course, students will be able to demonstrate an understanding of non-infectious and infectious causes of disease, which include nutritional imbalances, toxins, internal/external parasites, viruses, bacteria and fungi.
5. At the end of the course, students will generate a scholarly product requiring broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation and reflection. This outcome will be demonstrated by the preparation of a scholarly report and presentation of the report to the class.

**Human Rights:** Discrimination against anyone in this classroom will not be tolerated. Any such incident should be reported to Dr. Topliff. The Academic Senate's Committee on Human Rights is adamant that this University be an inclusive, non-threatening environment.

The University of Nebraska-Lincoln is a public university committed to providing a quality education to a diverse student body. It is the policy of the University of Nebraska-Lincoln not to discriminate based on gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation. This policy is applicable to all University administered programs including educational programs, financial aid, admission policies and employment policies.

**Students with Disabilities:** The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can discuss options privately. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be implemented in a timely manner. SSD contact information: 117 Louise Pound Hall.; 402-472-3787.

**Mental Health and Well-being Resources:** UNL offers a variety of options to students to aid them in dealing with stress and adversity. Counseling and Psychological & Services (CAPS) is a multidisciplinary team of psychologists and counselors that works collaboratively with Nebraska students to help them explore their feelings and thoughts and learn helpful ways to improve their mental, psychological and emotional well-being when issues arise. CAPS can be reached by calling 402-472-7450. Big Red Resilience & Well-Being (BRRWB) provides one-on-one well-being coaching to any student who wants to enhance their well-being. Trained well-being coaches help students create and be grateful for positive experiences, practice resilience and self-compassion, and find support as they need it. BRRWB can be reached by calling 402-472-8770.

**The following information is for Emergency Response:**

- **Fire Alarm (or other evacuation):** In the event of a fire alarm: Gather belongings (purse, keys, cellphone, N-Card, etc.) and use the nearest exit to leave the building. Do not use the elevators. After exiting notify emergency personnel of the location of persons unable to exit the building. Do not return to building unless told to do so by emergency personnel.
- **Tornado Warning:** When sirens sound, move to the lowest interior area of building or designated shelter. Stay away from windows and stay near an inside wall when possible.
- **Active Shooter**
  - **Evacuate:** if there is a safe escape path, leave belongings behind, keep hands visible and follow police officer instructions.
  - **Hide out:** If evacuation is impossible secure yourself in your space by turning out lights, closing blinds and barricading doors if possible.
  - **Take action:** As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the active shooter.
- **UNL Alert:** Notifications about serious incidents on campus are sent via text message, email, unl.edu website, and social media. For more information go to: <http://unlalert.unl.edu>.

Additional Emergency Procedures can be found here: <http://emergency.unl.edu>

**Integrated Principles and Prevention of Livestock Diseases**  
**Veterinary and Biomedical Sciences 403**  
**Spring 2021**

- January 25, Mon: Course Introduction
- January 27, Wed, am: Human/Animal Interactions; Normal Animal/Restraint  
January 27, Wed, pm: Introduction to ACE10 components
- January 29, Fri: Introduction to Disease
- February 1, Mon: **10 Minute Class Discussion**  
Environmental Influences on Disease
- February 3, Wed, am: Noninfectious Diseases, Deficiencies  
February 3, Wed, pm: Peer Review Discussion/Paper Organization
- February 5, Fri: **Quiz #1 10 pts**  
Noninfectious Diseases, Poisoning
- February 8, Mon: External and Internal Parasites  
**What's in the news assignment 5 pts**
- February 10, Wed, am: External and Internal Parasites  
February 10, Wed, pm: Peer Review Feedback Practice
- February 12, Fri: **Exam #1 100 pts**
- February 15, Mon: **10 minute Class Discussion**  
Infectious Disease Agents: Bacteria, Viruses, Fungi
- February 17, Wed, am: Controlling Disease Transmission  
February 17, Wed, pm: **Written Introduction of topic 15 pts**  
**Oral Introductions (5 pts), #1-#7**
- February 19, Fri: **Oral Introductions, #8-#14**
- February 22, Mon: Disinfection and Chemotherapy  
**What's in the news assignment 5 pts**



February 24, Wed, am: One Health (Dr. VanWormer)  
 February 24, Wed, pm: Peer Review Feedback Practice  
**Term Paper Introduction Due: Assign Peer-Review**

February 26, Fri: Innate Immunity

March 1, Mon: **10 minute Class Discussion**  
 Adaptive Immunity

March 3, Wed, am: **Quiz #2 10 pts**  
 Immunology and Immunization/Vaccines

March 3, Wed, pm: **Term Paper Peer-Reviews Due 10 pts x2**

March 5, Fri: Diseases of the Digestive System

March 8, Mon: Diseases of the Digestive System  
**What's in the news assignment 5 pts**

March 10, Wed, am: **Exam #2 100 pts**  
 March 10, Wed, pm: Peer Review Practice

March 12, Fri: Diseases of the Digestive System

March 15, Mon: **10 minute Class Discussion**  
 Diseases of the Respiratory System

March 17, Wed, am: Diseases of the Respiratory System  
 March 17, Wed, pm: **Term Paper Introduction and Body Due: Assign Peer-Review**

March 19, Fri: Diseases of the Respiratory System

March 22, Mon: Diseases of the Urogenital/Reproductive System  
**What's in the news assignment 5 pts**

March 24, Wed, am: Diseases of the Urogenital/Reproductive System  
 March 24, Wed, pm: **Term Paper Peer-Reviews Due 20 pt x2s**

March 26, Fri: Diseases of the Urogenital/Reproductive System

March 29, Mon: **10 minute Class Discussion**  
 Diseases of the Nervous System

March 31, Wed, am: Diseases of the Nervous System  
 March 31, Wed, pm: Generalized Diseases

April 2, Fri: Quiz #3 10 pts  
Generalized Diseases

April 5, Mon: Generalized Diseases  
Term Paper Due: Assign Peer-Review

April 7, Wed, am: Zoonotic Diseases, Agroterrorism  
April 7, Wed, pm: Foreign Animal Diseases

April 9, Fri: Exam #3 100 pts

April 12, Mon: Foreign Animal Diseases  
Term Paper Peer-Review Due 20 pts x2

April 14, Wed, am: TBD  
April 14, Wed, pm: TBD

April 16, Fri: TBD

April 19, Mon: Final Revised Term Papers Due 100 pts  
Oral Presentations (70 pts) #1 and #2

April 21, Wed, am: Oral Presentations #3 and #4  
April 21, Wed, pm: Oral Presentations #5 and #6

April 23, Fri: Oral Presentations #7 and #8

April 26, Mon: Oral Presentations #9 and #10

April 28, Wed, am: Oral Presentations #11 and #12  
April 28, Wed, pm: Oral Presentations #13 and #14

April 30, Fri: TBD

May 7, Fri, 7:30-9:30 am: Comprehensive Exam

## **Appendix B: List of possible term paper topics and topics chosen by students, Spring 2021**

### **Controversial issues concerning:**

Impact of Animal agriculture on the environment  
Raw milk consumption: Is it safe? Is it better?  
Tail-docking in livestock  
Use of manure as fertilizer  
Animal castration and pain management/pain management in food producing animals  
Animal welfare topics: slaughter methods; euthanasia methods  
Animal cloning/genetic modification (plants/animals)  
Broiler chickens: Should their growth be slowed?  
Animal-based diets vs. Plant-based diets  
Use of animals for product/cosmetic testing  
Consolidated farming (factory farming) enhances disease transmission/and animal health  
Humane animal research  
Farming practices and animal health  
Meat irradiation  
Chicken welfare and egg production  
Hemp as animal feed  
Antibiotic resistance/Antibiotic use in livestock feeds  
Confinement livestock production (cattle, swine, poultry)  
On-farm pathogen testing  
Emerging and exotic diseases (regulations, detection, control)  
Xenotransplantation  
Organic livestock raising and animal health  
Other?

### **Spring 2021 topics chosen by students**

Benefits of Surgical Castration of Calves  
Adverse Effect of Foie Gras Production on Ducks and Geese  
The Environmental Impact of Open-Net Fish Farming  
Reducing Unnecessary Antibiotic Use in Livestock Production in order to Combat Antibiotic Resistance  
Xenotransplantation: A New and Controversial Alternative to Organ Donation  
The Health and Added Environmental Effects of Animal and Plant-Based Diets  
The Use of Genetically Modified Beef as a Food Source  
Evaluating Housing Options for Egg-Laying Hens  
Farrowing Crate Use in Swine Rearing  
The Environmental Burden of Modern Animal Agriculture  
Is Pain Management a Necessity for Beef Cattle Castration?  
Why Tail Docking Should be Discontinued as a Routine Procedure  
Transitioning to Plant-Based Diets: A Viable Option to Mitigate Climate Change and Ensure Human Health

## Appendix C: Written Communications Rubric

Student Name: \_\_\_\_\_

Title: \_\_\_\_\_

Version: \_\_\_\_

Component/Points	Criteria	Comments	Points
Introduction 10 points	The introduction tells the reader <b>what to expect</b> . Background information is presented to introduce the controversial issue(s). The controversy is succinctly stated.		
Sources and Evidence 35 points	A thorough review and citation of relevant current peer-reviewed scientific literature is presented in an acceptable format corresponding to journal reference sources. A minimum of three peer-reviewed scientific references published within the last 3 years are cited. Uses appropriate relevant objective data derived from the reference sources to examine the sides of the issue(s).		
Assessment 10 points	All evidence is assessed using scientific methods. Assessments consider all sides of the issue(s).		
Conclusions 10 points	Conclusions are formulated and stated. Reasons for conclusions are summarized. A definite stand on the issue is clearly articulated. An appropriate course of action to pursue to address the controversial issue(s) is presented.		
Writing style and quality 35 points	Technical writing style corresponds to that of primary journal reference sources. Manuscript is logically-organized, technically-accurate and error-free. Language is used that skillfully communicates meaning to the reader with clarity and fluency.		

**Summary Comments:**

**Total Points:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## Appendix D: Peer Review Satisfaction Questionnaire (adapted from Joan Lu, 2016)

<b>Part 1. Satisfaction with the Peer Review Sessions</b>					
<b>Directions: Put an X inside the box that best fits your feelings towards each of the following statements.</b>					
<b>For statements 1-6 use the following scale:</b>	<b>Strongly Disagree</b> 1	<b>Disagree</b> 2	<b>Neutral</b> 3	<b>Agree</b> 4	<b>Strongly Agree</b> 5
1. The peer review comments/assignments were useful for improving my writing skills.					
2. The peer review comments/assignments helped me write clear argumentative/controversial statements.					
3. The peer review comments/assignments were useful for writing a better paper.					
4. The peer review comments/assignments helped me develop content in my paper.					
5. The peer review comments/assignments helped me improve my paper.					
6. The peer review comments/assignments helped me better organize my paper.					
<b>For statements 7-14 use the following scale:</b>	<b>Never</b> 1	<b>Almost Never</b> 2	<b>Neutral</b> 3	<b>Almost Always</b> 4	<b>Always</b> 5
7. The peer review comments/assignments prepared me to complete the paper on time.					
8. The peer review comments/assignments helped me use better vocabulary in my paper.					
9. The peer review comments/assignments helped me learn more about grammar.					
10. The peer review comments/assignments made me want to produce my best work.					
11. The peer review comments/assignments helped me use better sentences in my paper.					
12. The peer review comments/assignments made me improve grammar in my paper.					
13. The peer review comments/assignments helped me correct grammar mistakes.					
14. The peer review sessions helped me correct spelling errors in my essays.					
<b>Part 2. Satisfaction of Giving and Receiving Feedback</b>					
<b>Directions: Put an X inside the box that best fits your feelings towards each of the following statements.</b>					
<b>For statements 1-11 use the following scale:</b>	<b>Never</b> 1	<b>Almost Never</b> 2	<b>Neutral</b> 3	<b>Almost Always</b> 4	<b>Always</b> 5
1. I enjoyed giving my classmates feedback on their papers.					
2. Giving feedback helped me write better statements in my paper.					
3. Receiving feedback helped me write better statements in my paper.					
4. I enjoyed receiving feedback from my peers on my paper.					
5. Giving feedback helped me organize my paper better.					
6. Receiving feedback helped me organize my paper better.					
7. I looked forward to the peer review comments/assignments.					
8. Giving feedback helped me improve vocabulary in my paper.					
9. Receiving feedback helped me improve vocabulary in my paper.					
10. Giving feedback helped me use better grammar in my paper.					
11. Receiving feedback helped me use better grammar in my paper.					
<b>For statements 12-23, use the following scale:</b>	<b>Strongly Disagree</b> 1	<b>Disagree</b> 2	<b>Neutral</b> 3	<b>Agree</b> 4	<b>Strongly Agree</b> 5
12. I felt uncomfortable giving negative feedback to my peers.					
13. I felt comfortable giving positive feedback to my peers.					
14. I did not like receiving negative feedback on my paper.					
15. I liked receiving positive feedback on my paper.					
16. I did not like giving negative feedback on my peer's papers.					
17. I liked giving positive comments on my peer's papers.					
18. I felt uncomfortable receiving negative comments on my paper.					
19. I felt proud when I received positive comments on my paper.					
20. I avoided giving negative comments to my peers.					
21. I enjoyed giving positive feedback to my peer's writing.					
22. I did not enjoy receiving negative comments on my paper.					
23. I enjoyed receiving positive feedback from my peers.					

## Appendix E: Oral Communications Rubric

Student Name: \_\_\_\_\_ Presentation  
 Title: \_\_\_\_\_ Date \_\_\_\_\_

Component	Criteria	Comments	Points**
Introduction	The introduction told the audience <b>what to expect</b> . The <b>controversy was introduced</b> and succinctly-stated.		
Organization	The presentation was <b>logically organized</b> . <b>Both sides of the issue</b> were presented.		
Content	Appropriate, in-depth <b>background</b> information was presented.		
Evidence	Sufficient, detailed <b>objective data</b> was presented to support the analyses.		
Analyses	<b>Objective data</b> was used to support a consistent coherent analysis of the evidence that supports all viewpoints regarding the issue(s). A <b>definite stand</b> on the issue was clearly articulated.		
Presentation	The presenter spoke <b>clearly, loudly</b> enough and at an <b>effective pace</b> to foster communication. <b>Eye contact</b> was maintained with the audience. <b>Visual aids</b> were appropriate, informative, well-designed and <b>free of errors</b> .		
Responses to questions, knowledge	Responses were <b>direct and insightful</b> . Presenter discussed ideas freely, and understood the technical and conceptual aspects of the topic.		
Overall	Summative comment(s) regarding the <b>overall quality</b> of this presentation.		

\*\* Points – 10 points possible for each component

(A = 9, 10 pts; B = 7, 8 pts; C = 5, 6 pts; D = 3, 4 pts; F = 1, 2 pts)

Evaluator's Name \_\_\_\_\_