STUDENT LEARNING OUTCOMES:
Students successfully completing this class will be able to:
1. Identify, locate, and use refereed journals and other literary resources in biology.
2. Prepare and give an oral presentation based on primary research literature on a biological topic that meets stated criteria on evaluation sheet.
3. Prepare a typewritten review paper using proper citation.
4. Critically evaluate a scientific paper and presentation for clarity and content.

ATTENDANCE:
You are expected to attend all scheduled classes. More than 2 absences will result in the loss of a letter grade from your final average. More than 4 absences will result in automatic failure of the course.

REQUIREMENTS:
Every student must check their ASU e-mail address regularly and use the Blackboard website to retrieve grades and to receive assignments.

Presentation: Each student will prepare and present a 10-12 minute oral presentation on a selected biology-related research project (the instructor must approve the topic). The presentation will be mainly based on an in-depth understanding of a primary literature article, but coverage of related literature is encouraged. A 3-5 minute question period from the audience will follow the presentation; the presenter is expected to have a level of understanding of the topic to answer reasonable questions. Visuals are required and must be presented using presentation software. The visuals must include at least TWO data tables or figures from the literature (photos and explanatory flow charts do not constitute data). You may also bring in other objects when appropriate to the topic (i.e. handouts, maps, posters, skins, herbarium specimens, skulls, fossils, agar plates). A flashy presentation does not automatically earn you a high grade -- good content and ability to communicate does.

Topics will be submitted for approval at the FOURTH class meeting (Feb. 12). You must submit the proposed title of your written report and presentation, proper citation of two suitable primary references, and a signed affirmation of honesty. Presentation dates will be assigned after this date.

TOPIC SELECTION:
• The topic for your review paper and presentation must be biologically based.
• An encyclopedic look at a general health or medical issue (i.e. symptoms or treatments of AIDS, diabetes), disease cause (i.e. the role of stress in heart disease), or basic biological concept (i.e. photosynthesis, natural selection) is unacceptable.
• Your topic must be specific and must represent what is currently known in the biological literature (emphasize references that are no more than 10 years old).
• Select a topic that is interesting to you and that you would like to learn more about. You may find that you have to do reading from other sources to get a basic understanding of your topic before you even begin to get into the current literature.
• Select a topic (specific article) for which you can give a complete in-depth discussion of the research in 10 minutes. The research article that you select should complement the research article that your coauthors select. The review paper will be a synthesis of the papers you select (plus additional literature).
• Select a topic on which you feel confident that you can answer questions. Remember you will be the “class expert” on the day of your presentation and will be expected to have a broad understanding of your topic and should be familiar with the background information.
• Will your audience be interested in the topic? Will your audience have the background to understand your topic? If not, how much background will you need to provide in order for your audience to follow your talk?

**Written Report:** Each student will submit 3 copies of a typewritten research report complete with “Literature Cited” on Mar. 5th. This version of your review paper should be complete and will be critiqued and returned to you. You are expected to incorporate comments into your final draft. You will be required to submit your final draft ALONG WITH the marked rough drafts one week after your oral presentations are given. The text of the paper must be no less than four pages and no more than six pages in length, not including references. It must be double-spaced, 12-point font, left justified, 1 inch margins, with the pages consecutively numbered. Attach a cover sheet to ONE report. The review paper must be synthesized from at least FIVE articles from the primary research literature (1 or 2 of which will be emphasized in the oral presentations). The articles must come from refereed/peer-reviewed journals (i.e. Ecology, Science, Nature, Journal of the American Medical Association, Systematic Botany, Southwestern Naturalist, The Lancet). Newspaper articles and popular magazines such as, Discover, National Geographic, Smithsonian, Popular Science, Time, Newsweek, are not acceptable because they are not subject to peer review. You may however, use as many non-refereed sources as you wish (books, newspapers, popular magazines, Internet documents) to gain understanding, but again these cannot be counted as part of your required five references. However, information obtained from any source must be cited (both in your presentation and paper) and listed in the “Literature Cited” portion of your paper.

In the body of your text use the author, year format of citation. For example, “Population density often has strong effects on pollination (Kunin 1997)” OR “According to Newman et al. (1997), statistical tests conducted by many …”. Your paper should not use quote marks – they are included here to set apart my examples. In scientific writing style, conclusions that previous authors have drawn or suggested are usually paraphrased when they are incorporated and then credited in the “Author-Year” format. If multiple sources are cited together in the text, they should be listed in chronological order.

References in the Literature Cited section of your paper are to be listed in alphabetical order by the author’s last name. References with more than 5 authors should list the first 5 authors and then may use et al. notation. References should adhere to the formatting shown in the following examples:
**For journal articles**

**For electronic journal articles with a DOI (digital object identifier)**

**For books**

**For authored chapters from collective works**

**ASSESSMENT:**
Your grade in this course will be determined by points earned from the components listed below and the following formula:
Report Grade x 0.40 + Oral Presentation Grade x 0.40 + Partic. Grade x 0.20 = Your Grade
Letter grades will be assigned based on the following scale (modified as necessary by the attendance requirements previously listed): 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; below 60 = F.

**Oral Presentation = 40 %**
Oral presentation scores will be calculated using an evaluation form that covers several criteria in the following areas. The form will be available for you to review before you give your oral presentation. Your grade will be determined by an average of the instructor’s score and the class’ average score (after throwing out the extreme high and low score).

*Structural Components*
Demonstrate your ability to synthesize and organize information from the primary literature in a logical, lucid fashion (i.e. present a clear introduction as to what will be presented and why, use an overall logical organizational sequence, clearly identify the main ideas, make clear, smooth transitions between major points, use good examples and appropriate data, provide a thorough summary, give credit for ideas and data by citing references on each slide as they are used).

*Content Factors*
Demonstrate an in-depth understanding of your topic (i.e. provide clear examples and arguments, use appropriate vocabulary level, draw logical conclusions based on data, provide thought provoking discussion of implications, answer audience questions correctly and clearly).

*Presentation Factors*
Demonstrate your ability to convey information to others (i.e. use legible visuals that effectively illustrate concept or data, show enthusiasm for your topic, be aware of your physical space and that of the audience, maintain eye contact with your audience, speak loud enough so that all of your audience can hear you, speak at a speed such that the audience can understand the information, avoid nervous gestures, verbal crutches, and unprofessional posture, stay within the time limits).
Written Report = 40%
Written reports (final drafts AND edited first drafts) are due at the beginning of class ONE week after your presentation. Late papers will have points deducted (10% each day). Remember that the minimum requirement is for you to cite at least 5 references. The report will be graded for:

- Format, grammar, spelling, organization, neatness = 25%
- Content = 40%
- Response to reviewers’ comments = 10%
- References (format and correct use) = 25%

Participation = 20%
Class Participation
Students are expected to attend class and to complete various exercises in writing, editing, and critiquing. Grades earned on these exercises will contribute to a participation grade.

Peer Evaluation/Audience Participation
The evaluation of student presentations will constitute part of the speaker’s grade and part of the participant’s grade. Members of the audience will be graded on participation by completing an evaluation form for each speaker (to earn points for an evaluation form, comments must be included). The names of the evaluators will be removed from the forms and the forms given to the presenter. In addition, all members of the class are expected to be involved in the question/answer session following each presentation. Obviously, points for participation must be earned during class and cannot be made up, even for an excused absence.

ACADEMIC HONESTY:
All students are expected to conform to college-level standards of ethics, academic integrity, grammar and spelling. In particular, by enrolling in this class you agree to adhere to the University Honor Codeii. Any form of cheating in this course will result in a zero on the assignment. Plagiarism, using printed or unprinted work of others without citation, is cheating. Allowing others access to your work is cheating. If you have any questions about what constitutes plagiarism or cheating, please contact the instructor. You may also wish to consult the ASU Student Handbook for additional information regarding academic dishonesty and university penalties for such conduct.

RELIGIOUS HOLY DAY:
A student who intends to observe a religious holy day during the semester should make that intention known in writing to the instructor during the first week of the semester and one week prior to the absence. If this submission is completed, a student who is absent from classes for the observance of a religious holy day shall be allowed to take make up missed exams or assignments scheduled for that day in accordance with syllabus policy.

AMERICANS WITH DISABILITIES ACT:
Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 001, Houston Harte University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made. It is the responsibility of the student to inform
me at the beginning of the semester and provide authorized documentation through designated administrative channels.

**SEMINAR Schedule - BIOLOGY 4181-010 (Monday)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 22</td>
<td>Introduction to Course, Criteria for Selecting a Topic</td>
</tr>
<tr>
<td>Jan. 29</td>
<td>The Biological Literature – Finding References</td>
</tr>
<tr>
<td>Feb. 5</td>
<td>Citing Sources</td>
</tr>
<tr>
<td>Feb. 12</td>
<td>Note taking/ Writing Summaries</td>
</tr>
<tr>
<td></td>
<td>*Topic approval and date request form due</td>
</tr>
<tr>
<td>Feb. 19</td>
<td>Writing for Clarity, Flow, and Content</td>
</tr>
<tr>
<td>Feb. 26</td>
<td>Planning and Preparing Oral Presentations</td>
</tr>
<tr>
<td>Mar. 5</td>
<td>Critiquing scientific writing</td>
</tr>
<tr>
<td></td>
<td>* First draft of research report due</td>
</tr>
<tr>
<td>Mar. 12</td>
<td>NO CLASS – SPRING BREAK</td>
</tr>
<tr>
<td>Mar. 19</td>
<td>Work Day - Revisions</td>
</tr>
<tr>
<td>Mar. 26</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>Apr. 2</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>Apr. 9</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>Apr. 16</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>Apr. 23</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>Apr. 30</td>
<td>Course Review and Evaluation</td>
</tr>
</tbody>
</table>

In some weeks reading assignments will be provided from various sources.

**DROP POLICY:**
The last day to drop this course with a “W” is Apr. 2, 5:00pm.
\(^{1}\) http://blackboard.angelo.edu
\(^{2}\) http://www.angelo.edu/dept/writing_center/academic_honesty.html