

**Biol 3100 – Bioethics**  
**Schedule of Classes, Spring 2021**

Week	Day	Subject	Readings
1	Mon, Jan 18	<b>HOLIDAY</b>	-----
	Wed, Jan 20	Introduction ( <b>Kim</b> will ask for 2 volunteers to help us with discussions for the next class* (* she will do this before each subsequent discussion class that has assigned readings)	-----
	Fri, Jan 22	Good and Bad Ethical Reasoning: Moral Theories and Principles	1-18 in Pence, and articles at Canvas
2	Mon, Jan 25	Requests to Die: Terminal and Nonterminal Patients <b>(Start thinking about term paper topic on <u>either</u> medical <u>or</u> environmental issues and get approval from Andy by Friday, Feb. 5. It is easiest if you EMAIL ME your proposed topic)</b>	19-56 in Pence and articles at Canvas
	Wed, Jan 27	Comas: Karen Quinlan, Nancy Cruzan, and Terri Schiavo	57-83 in Pence and articles at Canvas
	Fri, Jan 29	<b>Guest Speaker from Hospice</b>	Articles at Canvas
3	Mon, Feb 1	Watch video <i>How to Die in Oregon</i> in Library or on-line at Canvas site	-----
	Wed, Feb 3	Abortion: The Trial of Kenneth Edelin	84-108 in Pence and articles at Canvas
	Fri, Feb 5	Assisted Reproduction, Multiple Gestations, Surrogacy, and Elderly Parents <b>One-page outline of your term paper is due. Consider <u>either</u> medical <u>or</u> environmental issues for your topic. Topic MUST have been approved by Andy (give outline to Andy). The Writing Fellows will then discuss your outline with you later.</b>	109-131 in Pence and articles at Canvas
4	Mon, Feb 8	Embryos, Stem Cells, and Reproductive Cloning <b>(Last day to drop without notation on transcript)</b>	132-156 in Pence and articles at Canvas
	Wed, Feb 10	Impaired Babies and the Americans with Disabilities Act	157-178 in Pence and articles at Canvas
	Fri, Feb 12	Watch video <i>American Experience: Test Tube Babies</i> in Library on on-line at Canvas site	-----
5	Mon, Feb 15	<b>HOLIDAY</b>	-----
	Wed, Feb 17	<b>EXAM #1</b>	-----
	Fri, Feb 19	Medical Research on Animals	179-195 in Pence and articles at Canvas
6	Mon, Feb 22	Medical Research on Vulnerable Populations	196-220 in Pence and articles at Canvas

	Wed, Feb 24	<b>Guest Speaker (Dealing with terminal patients)</b> <b>This class will probably occur at 7 PM in the evening!</b>	-----
	Fri, Feb 26	Watch video <i>The Boy in the Bubble</i> at Library or on-line at Canvas site.	-----
7	Mon, Mar 1	Ethical Issues in First-Time Organ Surgeries	221-242 in Pence and articles at Canvas
	Wed, Mar 3	The God Committee	243-263 in Pence and articles at Canvas
	Fri, Mar 5	Using One Baby for Another	264-283 in Pence and articles at Canvas
8	Mon, Mar 8	Ethical Issues in the Treatment of Intersex and Transgender Persons	284-298 in Pence and articles at Canvas
	Wed, Mar 10	Involuntary Psychiatric Commitment and Research on People with Schizophrenia	299-324 in Pence and articles at Canvas
	Fri, Mar 12	<b>No Class Day</b>	-----
9	Mon, Mar 15	Ethical Issues in Pre- Symptomatic Testing for Genetic Disease: Nancy Wexler, Angelina Jolie, Diabetes, and Alzheimer's	325-345 in Pence and articles at Canvas
	Wed, Mar 17	Ethical Issues in Stopping the Global Spread of Infectious Diseases: AIDS, Ebola, and Zika	346-366 in Pence and articles at Canvas
	Fri, Mar 19	Ethical Issues of the Patient Protection and Affordable Care Act	367-391 in Pence and articles at Canvas
10	Mon, Mar 22	Ethical Issues in Medical Enhancement (and their effect on people with Disabilities)	392-404 in Pence and articles at Canvas
	Wed, Mar 24	Ethical Issues in Treating Alcoholism <b>Last day to drop with a "W" on transcript</b>	405-421 in Pence and articles at Canvas
	Fri, Mar 26	Part 1: It's All Alive	ix-20 in Ausubel and articles at Canvas
11	Mon, Mar 29	<b>EXAM #2</b>	-----
	Wed, Mar 31	Part 1: It's All Alive	21-49 in Ausubel and articles at Canvas
	Fri, Apr 2	Part 1: It's All Alive <b>Term Paper due as if it were the final product and your best effort (turn in to Andy).</b> The Writing Fellows will then review your term paper with you later.	50-73 in Ausubel and articles at Canvas
12	Mon, Apr 5	Part 2: Hungry Ghost Stories	77-99 in Ausubel and articles at Canvas
	Wed, Apr 7	Watch video <i>The True Cost</i> at Library or at Canvas site	-----
	Fri, Apr 9	<b>No Class Day</b>	-----
13	Mon, Apr 12	Part 2: Hungry Ghost Stories	100-111 in Ausubel and articles at Canvas
	Wed, Apr 14	Part 2: Hungry Ghost Stories	112-139 in Ausubel

			and articles at Canvas
	Fri, Apr 16	Part 3: Value Change For Survival <b>Final Revised Copy of Term Paper due (turn in to Andy for scoring)</b>	143-164 in Ausubel and articles at Canvas
14	Mon, Apr 19	<b>EXAM #3</b>	-----
	Wed, Apr 21	Part 3: Value Change For Survival <b>(Confirm TODAY with the UA your points earned for the pre-class reading assignments and with Andy for your attendance!)</b>	165-190 in Ausubel and articles at Canvas
	Fri, Apr 23	Watch video <i>Fantastic Fungi</i> at Library or at Canvas site	-----
15	Mon, Apr 26	Review Session ( <b>Andy returns graded term papers</b> )	-----
	Wed, Apr 28	<b>Interim Day</b> (No classes!)	-----
	Fri, Apr 30	<b>COMPREHENSIVE FINAL EXAM 9:25-11:25 AM</b>	-----

**BIOETHICS**  
**Biol 3100 (3 credits), Spring 2021**

**A. Instructor: Dr. Andy Anderson** (Please call me Andy!)

Address: Biology Department  
BNR 327  
Utah State University  
Logan, Utah 84322-5305

Phone: 797-1913. If I'm not in, leave a message on my voice mail.

E-mail: [andy.anderson@usu.edu](mailto:andy.anderson@usu.edu) (this personal email gets to me faster than messages sent to me via Canvas, so use this personal email!)

**B. Assistants**

1. Undergraduate Aide
  - a. **Kim Schafer**
2. Writing Fellows
  - a. **To be announced**
3. Classroom technical Support
  - a. **To be announced**

**C. Meeting Times**

1. This class (CRN#11295) meets for lively discussions, or guest speakers, on Mondays, Wednesdays, and Fridays from 10:30-11:20 am in ENGR 108. **The ONE exception will be Wednesday, Feb. 24, when we will meet at 7 PM in the evening to hear a physician speak on dealing with terminal patients.**
2. There are five required videos for you to watch in the Media Collections Department of the Library or at the Canvas site (if possible) [5 class days were cancelled to give you time to watch these videos that may be up to 90 minutes long].

**D. Required Materials for Biol 3100**

1. "Medical Ethics – 8th edition" by Gregory E. Pence. 2017. This text is available at the USU Bookstore and an electronic copy is fine.
2. "Dreaming the Future: Reimagining Civilization in the Age of Nature" by Kenny Ausubel. 2012. This text is available at the USU Bookstore and an electronic copy is fine.

**E. Lectures and Images On-line**

1. The audio recording of the lectures and review sessions, and the images used, will be available on the Internet shortly after the lectures and reviews are over. You can access them by going to the CANVAS site for this course (if possible).

**F. Required videos to be watched in Library**

1. There are five videos that need to be watched in the Media Collections Department of the Library or on-line at Canvas site (if possible). I have given you a day off from class for each video so that you will have an opportunity to watch these videos in the library. The videos may last up to 90 minutes!
  - a. You will be tested about each of these videos on your exams. So, take notes!
    - 1) Watch *How to Die in Oregon*
    - 2) Watch *American Experience: Test Tube Babies*
    - 3) Watch *The Boy in the Bubble*
    - 4) Watch *The True Cost*
    - 5) Watch *Fantastic Fungi*

**G. Pre-class Reading Assignments and Class Attendance (this is 15.6% of your total points for this semester!)**

1. If you turn in your completed pre-class assignment to the UA for each of the 27 classes in which reading the textbook in advance is expected starting on January 22, you will receive 3 points each for a total of 81 points (this is 11.4% of your final grade).
  - a. These pre-class assignments will be posted at the Canvas site and you will need to print them off, do the assigned reading, answer the questions, and turn them in to the UA when you arrive at class.
  - b. The UA will read your pre-class assignment and will record your 3 points in a written ledger. If you answered any of the 3 questions incorrectly, you will lose some of these 3 points.
  - c. The UA will initial the pre-class reading assignments in the upper right corner, indicate your score on the paper and return them to you at the start of the next class.
2. There are 30 active classes this semester in ENGR 108 **starting on January 20 and ending on April 21** and you will receive one point for class attendance (30 points total) taken at some point during the class by me (this is 4.2% of your final grade). If you are not there when attendance is taken, you will lose that one point. I will keep a written record of attendance by passing around a sign-up sheet.

- a. If you are unable to attend class because of illness or emergencies, you will NOT receive the one point for attendance because you were simply not there. However, you CAN still turn in your pre-class reading assignment to the UA as soon as possible and earn those 3 points.
- 3. The 111 points for completing pre-class assignments and for class attendance is essential for a discussion class such as Bioethics. **You need to be prepared and present** for the day's discussion so that you can argue your point of view and learn about the diverse views of your classmates, the UA, and the Instructor!
  - a. These 111 points, which you control by answering the questions and attending class, will go a long way in helping you to improve your grade in this class!

**H. Examinations for Biol 3100** (this is 70.3% of your total points for this semester)

- 1. There will be three unit exams worth 100 points each and a two-hour **comprehensive** final exam (over entire course) worth 200 points. The textbooks, class discussions, presentations by guest speakers, and articles posted at the Canvas site will be used to formulate exam questions.
- 2. The exams will consist of multiple-choice, fill-in-the-blank, and an essay question.
- 3. Those students who ("heaven forbid") score less than 70% on the first exam **should seriously seek intensive tutoring or drop the class.**
- 4. Your scored and stapled close answer sheets will be posted **on the wall outside of VSB 219** several days after your exam (I will send an announcement when they are there).
  - a. I will pass our permission slips in the first days of class for you to agree, or not agree, to me posting your stapled-closed answer sheet on the wall outside of VSB 219.

**I. Term Paper** (this is 14.1% of your total points for this semester)

- 1. There is one term paper worth 100 points required in this course.
  - a. A one-page outline of your term paper is due on **Friday, Feb. 5**, in class. Consider either medical or environmental issues for your topic.
    - 1) You **MUST** get Andy's approval for your topic before doing the outline!
    - 2) Turn it in to Andy
    - 3) The Writing Fellows will then look the outlines over and discuss them with you.
    - 4) After your meeting with the Writing Fellows, you can begin work on your paper.
  - b. Your term paper is due as if it were the final product and your best effort on **Friday, April 2**, in class.
    - 1) Turn it in to Andy
    - 2) The Writing Fellows will then review your term paper and meet with you to discuss your work.
  - c. The final revised copy of your term paper is due for Andy to score on **Friday, April 16**, in class.
- 2. **You must get approval from me for your topic.**
- 3. Your paper should have the following components:
  - a. **15 pages of text (#12 font size), typed, double spaced, normal margins and spacing**, with bibliography and any illustrations or charts on extra pages.

- b. Employ mostly current references from journals. A few textbooks may be used if necessary.
  - 1) At least 10 references are expected (you can do more if you desire).
  - 2) Visit the help desk in the Sci/Tech library for assistance in downloading articles.
  - 3) **I do not want you to use any references from the Internet that lack author, date, or that are not from journals!**
- c. Pursue a specific topic of your choice (with my approval) which will educate me and you! The papers are expected to have at least two opposing points of view (a good example of such controversy is the abortion debate).
  - 1) Choose a topic you are interested in personally and be enthusiastic!
  - 2) State your opinion and your interpretation often in your paper (use the word "I" frequently!).
- d. Your paper should have four main parts:
  - 1) Introduction
    - a) In this section you state the specific issue you plan to pursue and how you plan to investigate it.
    - b) **DON'T JUST LAUNCH INTO YOUR PAPER. TELL ME WHAT YOU ARE TRYING TO ACCOMPLISH!** Please provide a statement of what you hope to achieve (a "**statement of purpose**") somewhere in the first 1-3 pages.
  - 2) Literature review
    - a) In this section you will present a review of current journal articles which specifically pertain to your chosen subject.
  - 3) Conclusion
    - a) In this section you state your answer to the problem cited in the introduction.
    - b) Tell me your conclusions to this unique issue you have investigated and researched .
  - 4) Literature cited
    - a) List at least 10 articles (preferably from journals), and books, you cited in your paper.
    - b) Use the format I borrowed from Ivan Palmblad attached at end of this syllabus.
5. See "Common Problems to Avoid" by Ivan Palmblad (a former Biology faculty member) attached at end of this syllabus.
6. Obtain approval for your topic and then turn in your outline, your paper, and your revised paper on time.
7. I have copied off a good paper for you to see how it should be done (note that term papers now are 15 pages of text).

## J. Course Grades

1. The letter grade is based on the percentage of total points earned on the pre-class reading questions, class participation, the three unit exams, the comprehensive final exam, and the term paper. **There is no extra credit or special projects to improve your grade.** The breakdown is as follows:

Actual Points Earned	Percentage of Total Points Earned	Grade
658-711	93-100	A
636-657	90-92	A-
608-635	86-89	B+
587-607	83-85	B
565-586	80-82	B-
537-564	76-79	C+
516-536	73-75	C
494-515	70-72	C-
466-493	66-69	D+
423-465	60-65	D
Less than 423	Less than 60	F

2. Up until my last office hour of the semester (usually the week before finals) you are invited to see me or the UA, to view the exam keys and debate your scores. **After my last office hour, I will only discuss the final exam with you, not your scores on earlier tests.**

#### K. Course Goals:

1. The university undergraduate catalog states the goal of this course is "Discussion of current controversial issues in medicine, animal rights, aesthetics, and conservation with emphasis on current socio/environmental problems".
2. My goal for this course is to study a variety of the current issues cited above so that each member of the class (including the instructor) can come to a "thoughtful understanding" of the ethical issues facing us as a society and as individuals. If this is done well, we will develop a "practical approach" which will enable us to judge future environmental, medical, and scientific controversial issues as they happen.
  - a. To achieve this goal, you all need to be prepared, present, and willing to argue your point of view and listen to the views expressed by your classmates, the UA, and the Instructor.

#### L. Student Responsibilities

1. **Each student is expected to have read and familiarized himself with the assigned literature and reading BEFORE coming to class!**
  - a. Since this class is a "discussion of current controversial issues" you must be ready to participate in a class discussion.
  - b. To insure this you will be completing pre-class reading questions which you will turn in to the UA and you will receive points for attending class.
2. Each student is expected to attend all classes and take supplemental notes during class discussions.
3. Each student is expected to turn in the outline, term paper, and revised term paper on time and score over 75% on the exams.
4. In the event there is some difficulty, it is the **student's responsibility** to contact the instructor or UA for advice or assistance.

#### M. Unacceptable Classroom Behavior

Since a significant goal of this class is to prepare each of you for your upcoming exams, then behavior that disrupts the classroom environment will be discouraged.

1. Once class has started, **cell phones should be silenced** and no ring tones, conversations, or text messaging are permitted.
2. Use of laptop computers in class is acceptable, provided it is utilized for notes or materials used in this class. **It is not acceptable to use your computer in class for recreational purposes or for doing work for a different class.** When you come to this class it is expected that you will focus your attention on this class and not engage in computer activities that detract from the classroom experience or that will distract your classmates. If the problem persists, you will be requested to cease your computer activities.

#### N. **Instructor's Responsibilities**

1. The instructor is expected to attend all discussions, read the assigned reading, present supplemental articles, and prepare examinations which are fair and representative **of the assigned reading and class discussions.**
2. The instructor will also be available at posted office hours to answer **specific** student questions and provide needed assistance.
3. The instructor will read and evaluate the student papers fairly and promptly.
4. The instructor will seek to stimulate and guide class discussions, but not to impose his own opinions and beliefs on anyone.

#### O. **Undergraduate Aide (UA), Writing Fellows' (WFs), and Tech Support Aide's Responsibilities**

1. The UA will come to all classes to help promote discussion so they can be available as a tutor for any students who need help preparing for exams.
2. The UAs will record the scores of the pre-class reading assignments in a written ledger (Andy will keep track of attendance)
2. The UA will score the exams and will contribute test questions for my test bank.
3. The UA will have scheduled office hours.
4. The WFs will evaluate your term paper outline and meet with you to offer advice and direction. **They will provide me with their notes of these meetings.**
5. The WFs will evaluate your term paper, **edit it in ink**, and meet with you to offer advice and direction. **They will provide me with their notes of these meetings.**
6. The Tech Support Aide will run the equipment so the class discussions and images are recorded and put on the internet.

#### P. **Library References**

1. A copy of each of the required texts will be on reserve at the Media Collections Department in the Library
2. Check the subject index in the Library to find additional useful books on Bioethics.
3. The clerk in the Reference Services/ Interlibrary Services can assist you in your literature search for current journal articles
4. The four required videos are in the Media Collections Department of the Library for direct viewing, but I am also striving to get them available at the Canvas site (time will tell how successful I will be)

**Q. Below You Will Find a University Statement on Academic Honesty.**

1. **DO NOT REMOVE ANY EXAMINATION MATERIALS FROM THE CLASSROOM ON EXAM DAYS!**
2. **DO NOT COPY OR REMOVE ANY EXAMINATION MATERIAL FROM THE UNDERGRADUATE AIDES' OFFICE!**
3. **WRITE AN ORIGINAL PAPER FOR THIS CLASS AND DO NOT PLAGIARIZE OTHER PEOPLE'S WRITINGS!**
  - a. **IT IS PERFECTLY ACCEPTABLE TO QUOTE OTHER PEOPLE'S WORK, JUST INDICATE THAT IS WHAT YOU ARE DOING.**
4. If you fail to follow these rules, I will make every effort to subject the offender to the disciplinary procedures designated by the University:

**R. Honor Pledge**

Students will be held accountable to the Honor Pledge which they have agreed to: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity."

***Academic Dishonesty***

The Instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code:

Acts of academic dishonesty include but are not limited to:

1. Cheating: (1) using or attempting to use or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity, including working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done "individually"; (2) depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (3) substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work; (4) acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission; (5) continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity; (6) submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or (7) engaging in any form of research fraud.
2. Falsification: altering or fabricating any information or citation in an academic exercise or activity.
3. Plagiarism: representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

Full text of the Student Code available at available at available at

<http://www.usu.edu/student-services/pdf/StudentCode.pdf>:

**S. Students with Disabilities**

Students with physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations in accordance with the Americans with Disabilities Act and

Section 504 of the Rehabilitation Act of 1973. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.

**T. University policy on withdrawals and incomplete grades**

1. I direct your attention to the current USU policy on incomplete grades and withdrawing from courses in the on-line Catalog, under Registration.
2. You will note that “incomplete grades” are only given for conditions beyond the students’ control and not due to poor performance. A student who receives an incomplete must retain all the scores they earned up to the date of the incomplete and later will ONLY be allowed to finish the remaining quizzes or exams.

**Student Performance  
On Exams in Bioethics (Biol 3100)  
During the Last 10 Years**

**Average Exam Scores (100 pts possible)**

<b>Year</b>	<b>Semester</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>	<b>Paper</b>	<b>Final</b>
2020	Spring	73.8	77.3	81.1	92.8	72.6*
2019	Spring	73.5	78.7	79.1	88.0	73.7*
2018	Spring	75.0	79.9	74.2	93.0	72.3*
2017	Spring	75.5	81.7	78.2	92.0	73.5*
2016	Spring	74.7	74.9	77.0	94.4	74.2*
2015	Spring	83.0	82.1	83.6	91.0	78.1*
2014	Spring	77.4	74.6	77.6	92.0	73.6*
2013	Spring	80.5	81.0	77.8	92.9	75.1*
2012	Spring	68.0	78.0	71.5	90.9	70.8
2011	Spring	76.7	76.9	69.2	89.4	70.0
<b>Average</b>		<b>75.8</b>	<b>78.5</b>	<b>76.9</b>	<b>91.6</b>	<b>73.4</b>

\*Starting in 2013 extra points became possible for pre-class reading assignments and attendance.

Semester	Year	Position	Points	Grade
Spring	2020	High	678.5	A
Spring	2020	Low	308	F
Spring	2020	Average	575.2	B-
Spring	2019	High	680	A
Spring	2019	Low	321	F
Spring	2019	Average	578.1	B-
Spring	2018	High	666.5	A
Spring	2018	Low	452	D
Spring	2018	Average	580.7	B-
Spring	2017	High	643.5*	A
Spring	2017	Low	478.5	D+
Spring	2017	Average	582.9	B-
Spring	2016	High	670.5*	A
Spring	2016	Low	411.0	F
Spring	2016	Average	571.3	B-
Spring	2015	High	663.0*	A
Spring	2015	Low	518.0	C
Spring	2015	Average	603.5	B
Spring	2014	High	670.0*	A
Spring	2014	Low	360.0	F
Spring	2014	Average	569.0	B-
Spring	2013	High	667.0*	A
Spring	2013	Low	378.5	F
Spring	2013	Average	593.3	B
Spring	2012	High	562.5	A
Spring	2012	Low	383.0	D
Spring	2012	Average	458.3	C+
Spring	2011	High	545.5	A-
Spring	2011	Low	369.5	D
Spring	2011	Average	439.1	C

\*Starting in 2013 extra points became possible for pre-class reading assignments and attendance.

## General Information for Interested Students Biol 3100

Some students may be interested in taking further courses with me. This sheet will provide that information.

### A. Courses Taught by D. Andy Anderson

1. Fall Semester 2021
  - a. Elementary Microbiology (Biol 2060) 4 credits
  - b. Human Dissection (Biol 4000) 1 credit
2. Spring Semester 2022
  - a. Human Anatomy (Biol 2320) 4 credits
  - b. Bioethics (Biol 3100) 3 credits
  - c. Advanced Human Physiology (Biol 4600) 5 credits
4. Others
  - a. Independent Study (Biol 3760) 1-2 credits – available every semester
    - 1) Students earn credit by writing a term paper on a mutually agreed topic.
  - b. Teaching Internship (Biol 4710) 1 credit – available every semester
    - 1) This credit is available to students who wish to volunteer as a UA in a class they have previously excelled in. (Grade of “B” or better)

### B. Other Courses of Interest

2. MCAT Prep Course (Biol 1030), 1 credit of pass/fail. This preparation course is only taught in spring by two successful premed students.
3. DAT Prep Course (Biol 1040), 1 credit of pass/fail. This preparation course is only taught in spring by two successful premed students.

## Citation

Material that is not common knowledge or is not stated in your own words must be cited. Failure to do so constitutes plagiarism. The citation style that we request is illustrated below.

The Literature Cited section at the conclusion of your paper will include an alphabetical listing of all works actually cited in the paper. Background sources used but not actually cited in the paper can be listed in a separate section headed Background Sources. A minimum of 6 to 10 different sources is expected.

### Some Sample Citations:

Small seed size is also correlated with a persistent seed bank (Thompson and Grime 1979), although the relationship is not necessarily causal (Silvertown 1989).

Both Salisbury (1942) and Baker (1972) noted that shrubs have bigger seeds than herbs and that trees have the biggest seeds of all.

The upper limits of normal plant height for all these species were obtained from Clapham et al. (1962).

### LITERATURE CITED

Baker, H.G. 1972. Seed weight in relation to environmental conditions in California. Ecology 53:997-1010.

Clapham, A.R., T.G. Tutin, and E.F. Warburg. 1962 Flora of the British Isles. 2d ed. Cambridge University Press, Cambridge

Salisbury, E.J. 1942. The reproductive capacity of plants. Bell, London

Silverton, J.W. 1989. The paradox of seed size and adaptation. Trends Ecol. Evol. 4:24-26

Thompson, K., and J.P. Grime, 1979. Seasonal variation in seed banks of herbaceous species in ten contrasting habitats. J. Ecol. 67:893-921.

Other citations that you may encounter:

1. Article with no identifiable author.  
Anonymous. 1980. Food allergy and intolerance. Lancet 2:1344-1345.
2. A corporate author.  
AMA Department of Drugs. 1980. AMA drug evaluation. 4th ed. John Wiley & Sons, New York.
3. An editor as author.  
Wood, R.K.S. editor. 1982. Active defense mechanism in plants. Plenum Press, New York.
4. Same author(s) with two citations published in the same year.  
Holmes, R.T., and H.F. Recher. 1986a. Search tactics of insectivorous birds foraging in an Australian eucalyptus forest. Auk 103:515-530.  
\_\_\_\_\_. 1986b. Determinants of guild structure in forest bird communities: an intercontinental comparison. Condor 88:427-439.

### Common Problems to Avoid

1. Omit needless words. Be direct and terse.

he is a man who.....he  
in a hasty manner.....hastily  
at this point in time.....currently

the reason why is that.....because  
 owing to the fact that.....since  
 my personal view.....my view  
 a large number of.....many  
 in the absence of.....without  
 in order to provide a basis for comparing.....to compare  
 in the vicinity of.....nearby  
 acts of a hostile nature.....hostile acts  
 He is a man who is very ambitious.....very ambitious  
 The purpose of this study was to test the hypothesis that.....I hypothesized

2. Data. Like strata and media, data is a plural noun and is best used with a plural verb.  
 The data is misleading. (improper)  
 These data are misleading.
  
3. Effect and affect. Effect as a noun means “result”; as a verb means “to accomplish”.  
 Affect, a verb, means “to influence”.  
 Cloud cover has a major affect on night temperatures. (incorrect)  
 Cloud cover affects temperature or has a major effect upon temperature.
  
4. Its and it’s. It’s is a contraction for it is. It is not possessive. It’s a wise dog that scratches its own fleas.
  
5. Compare and contrast. Compare includes to contrast.  
  
 I intend to compare and contrast apples and oranges. (incorrect)  
 I will compare apples and oranges.
  
6. Etc. Means “and other things.” Delete from formal papers. Items important enough to call for etc. are important enough to be named.
  
7. Nice or neat. Overused to the point of being meaningless. Avoid.
  
8. Double prepositions  
 I am going down to Salt Lake. I am going to Salt Lake  
In between quarters between quarters  
 I’m going back to my room I’m going to my room or I’m returning to my room.
  
9. Always underline or italicize scientific names. E.g. Homo sapiens