











Biol 3100 – Bioethics
Schedule of Classes, Spring 2017

Week	Day	Subject	Readings
	Mon, Jan 9	Introduction	-----
	Wed, Jan 11	Good and Bad Ethical Reasoning: Moral Theories and Principles	1-18 in Pence
	Fri, Jan 13	Requests to Die: Terminal and Nonterminal Patients (Start thinking about term paper topic on <u>either</u> medical <u>or</u> environmental issues and get approval from Andy by end of next week!)	19-56 in Pence
2	Mon, Jan 16	HOLIDAY	-----
	Wed, Jan 18	Comas: Karen Quinlan, Nancy Cruzan, and Terri Schiavo	57-83 in Pence
	Fri, Jan 20	Watch DVD <i>How to Die in Oregon</i> in Library	Handout on DVD
3	Mon, Jan 23	Guest Speaker from Hospice	Handout
	Wed, Jan 25	Abortion: The Trial of Kenneth Edelin	84-108 in Pence
	Fri, Jan 27	Assisted Reproduction, Multiple Gestations, Surrogacy, and Elderly Parents One-page outline of your term paper is due. Consider <u>either</u> medical <u>or</u> environmental issues for your topic. Topics MUST be approved by Andy (give outline to Andy). The Writing Fellows will then discuss your outline with you later.	109-131
4	Mon, Jan 30	Embryos, Stem Cells, and Reproductive Cloning (Last day to drop without notation on transcript)	132-156 in Pence
	Wed, Feb 1	Impaired Babies and the Americans with Disabilities Act	157-178 in Pence
	Fri, Feb 3	Watch DVD <i>American Experience: Test Tube Babies</i> in Library	Handout on DVD
5	Mon, Feb 6	EXAM #1	-----
	Wed, Feb 8	Medical Research on Animals	179-195 in Pence
	Fri, Feb 10	Medical Research on Vulnerable Populations	196-220 in Pence
6	Mon, Feb 13	Ethical Issues in First-Time Organ Surgeries	221-242 in Pence
	Wed, Feb 15	Guest Speaker (Dealing with terminal patients) This class will probably occur at 7 PM in the evening!	Handout
	Fri, Feb 17	Watch DVD <i>Blackfish</i> at Library	Handout on DVD
7	Mon, Feb 20	HOLIDAY*	-----
	Tues, Feb 21	The God Committee (*Attend classes as if it were Monday!)	243-263 in Pence

	Wed, Feb 22	Using One Baby for Another	264-283 in Pence
	Fri, Feb 24	Watch DVD <i>The Boy in the Bubble</i> at Library	Handout on DVD
8	Mon, Feb 27	EXAM #2	-----
	Wed, Mar 1	Ethical Issues in the Treatment of Intersex and Transgender Persons	284-298 in Pence
	Fri, Mar 3	Involuntary Psychiatric Commitment and Research on People with Schizophrenia	299-324 in Pence
9	Mon, Mar 6	SPRING BREAK	-----
	Wed, Mar 8	SPRING BREAK	-----
	Fri, Mar 10	SPRING BREAK	-----
			
10	Mon, Mar 13	Ethical Issues in Pre-Symptomatic Testing for Genetic Disease: Nancy Wexler, Angelina Jolie, Diabetes, and Alzheimer's	325-345 in Pence
	Wed, Mar 15	Ethical Issues in Stopping the Global Spread of Infectious Diseases: AIDS, Ebola, and Zika	346-366 in Pence
	Fri, Mar 17	Ethical Issues of the Patient Protection and Affordable Care Act	367-391 in Pence
	Mon, Mar 20	Ethical Issues in Medical Enhancement (and their effect on people with Disabilities) and Ethical Issues in Treating Alcoholism	392-423
	Wed, Mar 22	Part 1: It's All Alive	ix-20 in Ausubel
	Thur, Mar 23	Last day to drop with a "W" on transcript	-----
	Fri, Mar 24	Part 1: It's All Alive Term Paper (with one-page summary) Due as if it were the final product and your best effort (turn in to Andy). The Writing Fellows will then discuss your term paper with you later.	21-49 in Ausubel
12	Mon, Mar 27	Part 1: It's All Alive	50-73 in Ausubel
	Wed, Mar 29	Part 2: Hungry Ghost Stories	77-99 in Ausubel
	Fri, Mar 31	Watch DVD <i>Inequality for All</i> in Library	Handout on DVD
13	Mon, Apr 3	Part 2: Hungry Ghost Stories	100-111 in Ausubel
	Wed, Apr 5	Part 2: Hungry Ghost Stories	112-139 in Ausubel
	Fri, Apr 7	Part 3: Value Change For Survival Final Revised Copy of Term Paper (with one-page summary) Due (turn in to Andy for scoring)	143-164 in Ausubel
14	Mon, Apr 10	EXAM #3	-----
	Wed, Apr 12	Part 3: Value Change For Survival	165-190 in Ausubel
	Fri, Apr 14	Guest Speaker (Bureau of Land Management)	Handout
15	Mon, Apr 17	Evaluations of UAs and Discussion of term papers (As stated in the syllabus, you must present your paper in class or 10 points will be docked!)	-----
	Wed, Apr 19	Discussion of term papers (Confirm TODAY with the UAs your points earned for the pre-class reading assignments)	-----

		and attendance!)	
	Fri, Apr 21	Discussion of term papers	-----
16	Mon, Apr 24	Discussion of term papers	-----
	Wed, Apr 26	Discussion of term papers	-----
	Fri, Apr 28	Review session (Andy returns graded term papers)	-----
17	Wed, May 3	COMPREHENSIVE FINAL EXAM 11:30 AM-1:20 PM	-----

BIOETHICS
Biol 3100 (3 credits), Spring 2017

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

Address: Biology Department
VSB 231
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

Appts: You can make an appointment to visit with me by calling 435-797-3203

B. Assistants

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

C. Meeting Times

1. This class (CRN#10476) meets for lively discussions, or guest speakers, on Mondays, Wednesdays, and Fridays from 10:30-11:20 am in EDUC 130A. **The ONE exception will be Wednesday, Feb. 15 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 (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.
2. "Dreaming the Future: Reimagining Civilization in the Age of Nature" by Kenny Ausubel. 2012. This text is available at the USU Bookstore.

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.

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. 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* sometime the week of Jan. 16
 - 2) Watch *American Experience: Test Tube Babies* sometime the week of Jan. 30
 - 3) Watch *Blackfish* sometime during the week of Feb. 13
 - 4) Watch *The Boy in the Bubble* sometime during the week of Feb. 20
 - 5) Watch *Inequality for All* sometime during the week of March 27

G. Pre-class Reading Assignments and Class Attendance (this is 16 % of your total points for this semester!)

1. If you turn in your completed pre-class assignment to the UAs for each of the 26 classes in which reading the textbook in advance is expected starting on January 11, you will receive 3 points each for a total of 78 points.
 - 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 UAs when you arrive at class.
 - b. The UAs 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 UAs 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 35 active classes this semester in EDUC 130A **starting on January 9 and ending on April 26** and you will receive one point for class attendance (35 points total) taken at some point during the class by the UAs. If you are not there when attendance is taken, you will lose that one point. The UAs will keep a written record of attendance.
 - 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 UAs as soon as possible and earn those 3 points.
3. The 113 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, UAs, and Instructor!

- a. These 113 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% 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 distributed in class** 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** on Friday morning following your exam.

I. Term Paper (this is 14% 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, Jan. 27**, 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 Associates 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 (with separate one-page summary) is due as if it were the final product and your best effort on **Friday, March 24**, 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 (with separate-one page summary) is due for Andy to score on **Friday, April 7**, in class.
 - d. It is expected that you will present and discuss your term paper in the last weeks of this semester. **If you do not present and discuss your paper in class, 10 points will be docked from you term paper points!**
2. **You must get approval from me for your topic.**
3. Your paper should have the following components:
 - a. Separate one-page summary sheet (with paper title and your name) for distribution to class for later discussion.
 - b. 12 pages of text, typed, double spaced, with bibliography and any illustrations or charts on extra pages.
 - c. Employ mostly current references from journals. A few textbooks may be used if necessary.
 - 1) At least 6-10 references are expected.
 - 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!**
- d. Pursue a specific topic of your choice (with my approval) which will educate me and you! The best papers are those that 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!).
- e. Your paper should have five main parts:
 - 1) **Separate one page of summary** of your findings (with title of paper and your name), opinions, and conclusions
 - 2) 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"**).
 - 3) Literature review
 - a) In this section you will present a review of current journal articles which specifically pertain to your chosen subject.
 - 4) 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 .
 - 5) Literature cited
 - a) List the 6-10 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.

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
660-713	93-100	A
638-659	90-92	A-

610-637	86-89	B+
588-609	83-85	B
567-587	80-82	B-
538-566	76-79	C+
517-537	73-75	C
496-516	70-72	C-
467-495	66-69	D+
424-466	60-65	D
Less than 424	Less than 60	F

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

K. Course Goals:

- 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".
- 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.
 - 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 UAs, and the Instructor.

L. Student Responsibilities

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

- 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 (this is going to be hard on me!)

O. Undergraduate Aides' (UAs), Writing Fellows' (WFs), and Tech Support Aide's Responsibilities

1. The UAs will come to all classes and discussions 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 and also keep a record of student attendance.
2. The UAs will assist the instructor in scoring the exams and will contribute test questions for my test bank.
3. The UAs will have scheduled office hours.
4. The WFs will evaluate your one-page summary 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.

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:

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/studentservices/pdf/StudentCode.pdf>:

R. 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.

S. 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)

Year	Semester	#1	#2	#3	Paper	Final
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
2010	Spring	71.7	77.6	76.6	88.9	78.8
2009	Spring	72.3	76.3	72.9	88.4	73.4
2008	Spring	78.6	82.1	82.2	93.4	79.2
2007	Spring	71.7	79.4	77.2	92.4	75.5
Average		75.5	78.3	76.6	91.4	74.9

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

Student Final Grades in Previous 10 Years of Bioethics (Biol 3100)

Semester	Year	Position	Points	Grade
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
Spring	2010	High	568.5	A
Spring	2010	Low	388.5	D
Spring	2010	Average	470.1	C+
Spring	2009	High	546.0	A-
Spring	2009	Low	286.0	F
Spring	2009	Average	458.1	C+
Spring	2008	High	556.5	A
Spring	2008	Low	422.5	C-
Spring	2008	Average	502.7	B
Spring	2007	High	567.0	A
Spring	2007	Low	394.5	D+
Spring	2007	Average	480.0	B-

* Starting in 2013 extra points became available for pre-class reading assignments and for 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. Summer Semester 2017
 - a. Human Anatomy (Biol 2320) 4 credits
2. Fall Semester 2017
 - a. Elementary Microbiology (Biol 2060) 4 credits
 - b. Human Dissection (Biol 4000) 1 credit
3. Spring Semester 2018
 - 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

1. Emergency Medical Technician (EMT)
 - a. Contact Bridgerland Applied Technology College at 435-753-6780 for information.
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.
4. Biology Prehealth Programs Orientation (Biol 1750), 1 credit, fall semester. This course is designed to allow students to meet and listen to a wide variety of healthcare professionals so they can perhaps choose a career for their own future.

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

Silvertown, 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