Jan 25 Lecture	Intro to the Bio Major at SBCC. Transfer Info. Intro to the Course	*Chapters 1 & 21*
Jan 26 Lab 1	Intro to Microscopy of Plant Cells; Cell Walls; Surface/Volume Ratio	*Chapters 2, 3, 4, & 13*
Jan 27 Lecture	Scientific Method; Organization of Matter; Macromolecules; Cellulose & Starch	
Jan 28 Lab 2	Organelles of Plant Cells; Nucleus, Nucleolus, Vacuole; Diffusion & Osmosis; Turgor Pressure	
Feb 1 Lecture	Euc. Cell Struct. & Funct; Cell Wall Struct; Fluid Mosaic Model of PM	*Chapters 2, 3, 4 & 13*
Feb 2 Lab 3	Organelles of Plant Cells; Chloroplasts and Mitochondria; Procaryotic Cells	
Feb 3 Lecture	Euc. Cell Struct. & Funct. Endomembane System; Origin of Euc. Cells	
Feb 4 Lab 4	Mitosis and Cytokinesis in Onion Root Tip Cells. Diploidy	
Feb 8 Lecture	Photosynthesis; The Photochemical Reactions (the "Z Scheme")	*Chapters 5, 6 & 7*
Feb 9 Lab 5	Photosynthesis: Chromatography & Spectroscopy of Photosynthetic Pigments	
Feb 10 Lecture	Photosynthesis: The Photochemical Reactions, Continued and Review	
Feb 11 Lab 6	Oxygen Production from Photosystem II; Limiting and Retarding Factors	
Feb 15	**Washington's Day Holiday**	*Chapters 5, 6 & 7*
Feb 16 Lab 7	Products of Photosynthesis: Glucose and Starch; Cellular Respiration; Anaerobic Pathways	
Feb 17 Lecture	Photosynthesis: The Calvin Cycle (C_3 Pathway); C_4 Pathways	
Feb 18 Lab	Catch up and Review for Lab Practical #1	
Feb 22 Lecture	Cellular Respiration	*Chapters 5, 6 & 7*
Feb 23 Lab	Catch up and Review for Lab Practical #1	
Feb 24 Lecture	Review for Midterm #1	
Feb 25 Lab	**Lab Practical #1**	
Mar 1	**Midterm #1**	
Mar 2 Lab	Discussion of Scientific American Article Abstract and Annotated Bibliography Assignments	
Mar 3 Lecture	Apical Meristems & Primary Tissues of Plant Stems	*Chapters 23, 25, 29 & 30*
Mar 4 Lab 8	Plant Microanatomy: Apical Meristems & Primary Tissues of Stems	
Mar 8 Lecture	Tissues of Roots and Leaves; Soil; The Transpiration Stream & The Assimilate Stream	*Chapter 24*
Mar 9 Lab 9	Plant Microanatomy: Primary Tissues of Roots and Leaves	
Mar 10 Lecture	Lateral Meristems & Secondary Growth in Plants	*Chapter 26*
Mar 11 Lab 10	Plant Microanatomy: Secondary Tissues of Plant Stems	
Mar 15 Lecture	Geologic Time and the Four Land Floras; "Rhyniophytes"	*Inside Front Cover & Chs 12 & 17*
Mar 16 Lab 11	Seedless Vascular Plants: Fern Life Cycle; Homospory	
Mar 17 Lecture	Seedless Vascular Plants; Psilophytes/Lycophytes/Sphenophytes	
Mar 18 Lab 12	Seedless Vascular Plants; *Selaginella* Life Cycle and Heterospory	
Mar 22 Lecture	Gymnosperms: Survey of Extinct and Extant Phyla	*Chapter 18*
Mar 23 Lab 13	Gymnosperms: Pine Life Cycle; Pollen Cones & Pollen	
Mar 24 Lecture	Gymnosperms: Survey of Phyla	
Mar 25 Lab 14	Gymnosperms: Pine Life Cycle; Seed Cones and Seed Structure	
Mar 26, Friday	**Scientific American article abstract due in the Biology Office (EBS 212) by 4 PM**	
Mar 29 — Apr 2	**Spring Vacation**	
Apr 5 Lecture	Angiosperms: Morphology & Origin of the Flower; Pollination Biology; Co-evolution	*Chapters 19 & 20*
Apr 6 Lab 15	Angiosperms: Flowers and Pollination Biology	
Apr 7 Lecture	Angiosperms: Fruits and Seeds; Morphology of the Carpel; Coevolution	
Apr 8 Lab 16	Angiosperms: Fruit and Seed Structure; Seed Dispersal & Seed Germination	
Apr 12 Lecture	Catch up and Review for Midterm #2	
Apr 13 Lab	Catch up and Review for Lab Practical #2	
Apr 14	**Midterm #2**	
Apr 15	**Lab Practical #2**	
Apr 19 Lecture	Molecular Genetics: DNA Structure & Replication	*Chapters* 8 & 9
Apr 20 Lab 17	DNA Isolation	
Apr 21 Lecture	Mendelian Genetics: Meiosis and Hybrid Crosses	
Apr 22 Lab 18	Flower and Fruit Set; Leaf Abscission, Phototropism, Etiolation, Gigantism	*Chapters 27 & 28*
Apr 26 Lecture	Plant Hormones/Plant Growth and Development	*Chapters 27 & 28*
Apr 27 Lab 19	Fungi & Plasmodial Slime Molds; Prep. of Media/Sterile Technique	
Apr 28 Lecture	Intro to the Fungi	*Chapters 12, 14 & 15*
Apr 29 Lab 20	Fungal Life Cycles	
May 3 Lecture	Fungal Body Plan & Ecological Roles	*Chapters 14*
May 4 Lab 21	Planktonic Algae; Diatoms and Dinoflagellates	*Chapter 15*
May 5 Lecture	Intro to the Algae; Survey of Algal Phyla	
May 6 Lab 22	Brown, Red and Green Algae; Life Cycles	
May 10 Lecture	Benthic Algae; Algal Distribution	*Chapter 15*
May 11 Lab 23	Green Algae Life Cycles	
May 12 Lecture	Catch up and Review for Final Exam	
May 13	**Lab Practical #3**	
May 14, Friday,	**Annotated Bibliography due in Biology Office (EBS 212) by 4 PM**	

May 17, Monday, Final Exam, 8-10 AM (in our same lecture hall, EBS 309)

Course Syllabus

Biology 101 is a 5-unit course required for the biology major (including pre-med., zoology, marine biology, etc.). It is usually taken first in the series, followed by Bio 102 (Animal Biology), Bio 103 (Cell Biology), and Bio 104/105 (Molecular Biology).

CRN	SUBJ/CRSE	UNITS	COURSE TITLE	LECTURE	LAB
54951	Bio 101	5.00	Plant Biology	MW 9:35-10:55am EBS 309	TR 8:00-10:50 am EBS 201
54952	"	"	"	"	TR 11:10-2:00 pm "
54953	"	"	"	"	TR 2:20-5:10 pm "

Start Date: January 25, 2010 End Date: May 14, 2010

Last Date to add the class is February 6. To add the class, you must get an add code number from me.
Last Date to drop the class (without a "W") and receive a refund is February 6
Last Date to drop with a "W" is March 26. You are responsible for dropping classes.
After March 26 you cannot drop the class, nor can the instructor drop you. You will receive a letter grade for the class.
Failure to attend, hand in assignments, and/or take an exam will result in a letter grade for the class of F, not W.

Office: EBS 324 Office Hours: MW 8:30-9:30
Phone: (805) 965-0581 ext. 2515 (or ext. 2311 to reach Chelsea in the Biology Office)
E-mail: cummings@sbcc.edu
Textbook: Peter Raven, Ray F. Evert and Susan E. Eichorn, 2005. Biology of Plants, 7/e. New York: W. H. Freeman. ISBN: 1-57259-041-6

Midterm and Final Exams:
1. The format of the two midterms and final will be a combination of diagrams, short descriptive answers and essays.
2. Each exam will be worth 100 points.
3. Each midterm exam and the final will cover only new material.
4. There will be in-class review sessions before each exam.
5. There will be no make-up exams.

Lab Practicals:
1. There will be a lab practical exam during your lab period accompanying each midterm and the final.
2. Lab practicals will consist of 100 multiple choice questions on the material presented in lab, but may indirectly include lecture material on the same topics.
3. Questions will be of a practical nature, e.g. identification of organisms, structures, processes, techniques, etc.
4. Each lab practical will be worth 100 points (same value as the midterms and final!).
5. You will be allowed to consult your lab and lecture notes and drawings during the lab practicals. No books or Xeroxed materials other than my handouts permitted. Since you will have "open notes", I will expect precise answers to specific questions.
6. There will be no make-up lab practicals.

Lecture and Lab Courtesy: Arrive on time. In case of late arrival to the Lecture Hall, use the door at the back to avoid disturbing other students. Turn your cell phone off. Using your cell phone during class, even to text, is discourteous.

Lab Health and Safety: No food or drinks are allowed in the laboratory. Shoes with closed toes are required at all times. Safety goggles are available at all times, and are required for specific lab exercises. The laboratory is equipped with fire extinguishers, fire blanket, eyewash station and full body shower. Procedures for using these items will be discussed at the beginning of the appropriate laboratory periods. There will be a 15 minute break at approximately the midpoint of each 3-hour laboratory to allow for personal needs.

Academic Honesty: The SBCC Academic Honesty policy applies in this class. Backpacks, books, and other items will be placed on the floor during exams. Any kind of cheating, sharing of answers on exams, plagiarism or other dishonesty will be reported to the dean, according to SBCC policy. It is my philosophy to assume my students are persons of character and integrity and I will treat you as such. Do not abuse this trust. If you are not absolutely certain of the meaning of the terms *character* and *integrity*, look them up in the dictionary. If you are not absolutely certain of their importance in your personal and future professional life as a scientist, please come to my office and allow me to explain.

Summary of Points:
Midterms, 2 @ 100 points……..200
Final Exam @ 100 points…….…..100
Lab Practical Exams, 3 @ 100 points……...…300
Scientific American article abstract……...….....50 (see below)
Annotated Bibliography……..…...100 (see below)
750 points possible

Grade Policy: *You must attend class regularly, and complete all assignments. Failure to do so will result in an F grade.* If you attend class regularly and complete all assignments, then I guarantee that if you get 90% if the possible points you will get an A. Likewise 80% is a guaranteed B and 70% is a guaranteed C. Depending on the performance of the class, I may lower these percentages, but I will never raise them (you can't lose). And by adding up your points, you will know where you stand at any given time in the semester.

Note: Unexpected events sometimes occur that may affect your performance in the class. If you find you are falling behind, you may want to consider the possibility of withdrawing from the class before the withdrawal date (see above, or check the SBCC calendar), rather than having a poor grade on your transcripts. You may also want to consider the possibility of taking an Incomplete in the class, especially if difficulties arise toward the end of the semester. Having a D or an F on your transcripts should be avoided.

Scientific American Article Abstract

Due Friday, March 26, at the Biology Office (EBS 212) by 4 PM

Overview of this Assignment

You will choose a **full-length "Feature Article"** in ***Scientific American*** magazine, read it carefully, take reading notes, and write an abstract of the article. An abstract in a biological journal is an overview, or summary of the work reported in the article.

You may choose to check out copies of *Scientific American* magazine from the SBCC Library or other library. Or, you may choose to purchase the current month's edition at a newsstand. Or, you may choose to go online to www.sciam.com to access articles. You will be able to see abstracts of all articles in the magazine online, but you may have to purchase a subscription or at least a pay a fee to access the full text of the full-length "Feature Articles".

You will summarize the article (write an "abstract") in one page (250 to 500 words). Your first paragraph should state the reason(s) you chose this particular article. You will no doubt at some future time cite your interest in, and/or information from, this article to a teacher, or in an interview for an internship or job, or in a request for a letter of recommendation. My advice: Take this literature search seriously.

Style Guide

Follow this Style Guide in preparing this assignment so that you can earn maximum points.

The Abstract (Summary)

The abstract (summary) must be between 250 and 500 words in length.
Use a standard, black, non-italic font, such as Times New Roman, at 11 or 12-point size.
Use double spacing.
Use standard margins.
The writing must be free of grammar and spelling errors (uze you're grAmmer and sPel chekuR…)

The Finished Product should look like this

The first page is the title page, and must contain the following information:
- Title of Assignment (*Scientific American* Article Abstract)
- Title and author of the *Scientific American* article you used
- Volume number and year of publication
- Name of the class (Biology 101)
- Name of the institution (Santa Barbara City College)

My name (Dr. Robert Cummings)
Your name
Date submitted (March 26, 2010)
Next page: the abstract (summary).
Next page(s): the reading notes, left in rough manuscript form (or word processed).
Next pages: Xerox (or downloaded) copy of the full article.
Make and keep a **copy** of this completed work; notes, article, etc. (you never know….).
Staple all pages together and put them in a new **beige manila file folder**, with your last name written on the tab.
Place the file folder in the box labeled "Bio 101 Abstracts" in the Biology Office (EBS 212).

The Assignment will be Graded on accuracy, depth, relevance and form as follows:

Abstract ……...…….20 points (quality, relevance, accuracy)
Reading notes……20 points (quality, quantity, utility)
Format……..…..……10 points (did you follow this style guide?)
50 points possible

Late Penalty

5 points per school day will be deducted from the total for late papers.
Failure to hand in this assignment will result in a very low final grade (likely an F) in the course.

Annotated Bibliography

Due Friday, May 14, at the Biology Office (EBS 212) by 4 PM

Overview of the Assignment:

This assignment is meant to be an extension of the area of personal interest you began to develop in your *Scientific American* article abstract. Ideally you are beginning to focus on an area of great personal interest and relevance to your future professional work. And, in the spirit of any scientific endeavor, you should be beginning to accumulate knowledge and resources in a systematic way and finding out who is doing the kind of work you are interested in.

This assignment requires you to use internet resources, specifically through the SBCC Luria Library, to find articles in the scientific journals that publish research in your specific area of interest.

You will find, review, read, and download five full-length (not just the abstracts) peer-reviewed research articles from one or more scientific, peer-reviewed research journals (not *Scientific American* magazine this time). You will take at least a page of reading notes on each of these articles to hand in with the finished assignment. These five articles comprise your **bibliography**, which you will then **annotate**. An **annotation** is a short (a few sentences, or 50 to 75 words) summary of the content of the article, and can include your personal evaluation of its importance to your own current understanding and/or future professional work. For further explanation and examples of annotated bibliographies, go to www.library.cornell.edu/okuref/research/skill28.htm.

Style Guide

Follow this Style Guide in preparing this assignment so that you can earn maximum points.

Finding the articles:

Before the internet, students actually had to go to university libraries to read the journals (community colleges in California, like SBCC, have never had the financial resources to afford subscriptions to research journals). Now journals are online, but there is usually a catch. Some journals show only abstracts of articles unless you are a subscriber, which is quite expensive. There are some journals, however, that will show the full text of the articles, and you can limit your search to just full-text and peer-reviewed articles.

Online: The Luria Library switched recently from the ProQuest periodical database to ACADEMIC SEARCH PREMIER. To get to this new database, go to the SBCC home page. In the menu, select About SBCC. In the pull down menu, select Eli Luria Library. Select Enter Library Website. Or, you can go there directly at http://LIBRARY.SBCC.EDU.

At the library website, select "Databases and Other Electronic Materials." The first database you'll see is Academic Search Premier, and this is an excellent source with over 12,000 publications indexed and over 8,000 full text publications.

Scroll down further on the "Databases and Other Electronic Materials" page of the library website and you will find two Science-Specific Databases: Open Science Directory and Scirus. If you choose Open Science Directory, select that link and click again on Open Science Directory. Click on the Subject box, then click on Select a Subject. Choose Science, then scroll down and choose the discipline you are interested in. You will be shown the journals in that discipline, in which you can browse and read articles of interest. If you choose Scirus, select that link and begin to search.

The Format of the Assignment:

Use a standard, black, non-italic font, such as Times New Roman, at 10 to 12-point size.
Use double spacing.
Use standard margins.
The writing must be free of spelling and grammar errors.

The Annotations:

Use standard citation technique for the articles (the way citations were done at the end of the articles you read, or follow the citation guidelines used at the Cornell University annotated bibliography URL cited above).

The annotations should be 4 to 10 sentences in length, and should be between 50 and 100 words total.

The annotations must be in your own words.

The Reading Notes:

At least a page of handwritten (or word-processed) notes must accompany each article and annotation.

These notes will be handed in.

The Finished Product should look like this:

First page is the title page with the following information:

Title of Assignment (e.g. **"Sharks, an Annotated Bibliography"**)
Name of the class (Biology 101)
Name of the institution (Santa Barbara City College)
My name (Dr. Robert Cummings)
Your name
Date submitted (May 14, 2010)

Next page(s): the annotated bibliography of the five articles.

Next pages: your handwritten notes taken when you read the articles.

Make and keep a **copy** of this completed work; notes, article, etc. (you never know….).

Staple the pages together, in order.

Next pages: Xeroxed (or downloaded) copies of the five articles (or at least the first page and Abstract) in your bibliography.

Put all the above in a new **beige manila file folder**, with your last name written on the tab.

Place the folder in the box labeled "Bio 101 Annotated Bibliography" in the Biology Office (EBS 212) by 4 PM.

The Assignment will be Graded as follows**:**

Bibliography ……...……25 points (quality, relevance, accuracy)
Annotations……..25 points (quality, utility, accuracy)
Reading notes……...25 points (quality, quantity, utility)
Format……..…..……..……..25 points (did you follow this style guide?)
100 points possible

Late Penalty

Five points per school day will be deducted from the total for late papers. Note that very late assignments may not be accepted at all, if final grades for the course have been submitted (a few days after our final exam).

Failure to hand in this assignment will result in a very low final grade (likely an F) in the course.