BIOLOGY 1A: COURSE SYLLABUS **Fall 2015**

Faculty: Dr. Pauly and Dr. Fischer are from the Department of Plant and Microbial Biology. Dr. Welch is from the Department of Molecular Cell Biology. The faculty will hold office hours (while they are lecturing) as follows:

Markus Pauly	MW 9-10 (458 Evans) Th 2-3 (2084 VLSB)	2-1722, Energy Biosciences Institute, mpauly69@berkeley.edu http://pmb.berkeley.edu/profile/mpauly#a2
Robert Fischer	MW 9-10 (458 Evans) Th 2-3 (2084 VLSB)	2-1314, 231A Koshland, rfischer@ berkeley.edu. http://epmb.berkeley.edu:8080/facPage/dispFP.php?I=8.
Matthew Welch	MW 9-10 (458 Evans) Th 2-3 (2084 VLSB)	3-9019, 305 LSA, welch@berkeley.edu http://mcb.berkeley.edu/index.php?option=com_mcbfaculty&name=welchm

Course Coordinator: Mike Meighan. 2-4110, 2088 VLSB, e-mail is **mmeighan@berkeley.edu**. Office hours are Monday 11-12, Wednesday 11:30-12:30 (and by appointment). Any administrative or grading issues should be addressed to the course coordinator.

Graduate Student Instructors: The GSI's will instruct the discussion sections. A GSI will be available in the GSI office, 2084 VLSB, between 10-2, M, T, Th, F and 11-2 W. Messages may be left in your GSI's mailbox in 2084 VLSB.

Please turn off cell phones prior to the start of lecture.

TIME TABLE

The drop deadline is Sept. 4. Deadline to change grading option from P/NP to letter grade is September 25. Deadline to change letter grading to P/NP is Oct. 30th.

1. **Lectures:** Begin Wednesday August 26and end on Friday December 4. Lectures are held in 1 Pimentel from 8-9 AM and simulcast in 10 Evans. Lectures may be available on the web (**http://webcast.berkeley.edu/courses/**). Lecture handouts are posted on bCourses. No note taking service is authorized.
2. **Email address:** We will routinely email the students about once a week. We will use the email address you have listed in the CalNet Directory. If it isn't the one you check, then you need to change it in the CalNet directory. If you have not received any emails yet, there is a problem with your listed email address. bCourses will be used frequently, check it!
3. **ADDING: Use Tele-BEARS. To add Bio 1A, you must be enrolled in Bio 1AL or be exempt** from simultaneous enrollment. For more information click under enrollment information on our url: http://mcb.berkeley.edu/courses/bio1a/.
4. **SWITCHING DISCUSSION/LAB** (Permanent Switch): On bCourses click on "Click Here to Switch Discussion Sections" for a link to a page with instructions on how to switch sections via TeleBears. You need to do your best to work out your discussion assignment by the first week.
5. **DISCUSSION:** Begins Monday 8/31. Attendance will be taken. You must attend your assigned discussion section.
6. **LABORATORY:** Lab lecture begins Monday August 31st. L**abs begin Tuesday September 1.** The first lab covers Safety, and Equipment. The lab exercise (lab manual) is available on bCourses and at Replica Copy. **Note that there is a 3 point quiz for each lab.**

7. **Attendance**: You are required to attend the lab AND discussion sections in which you are enrolled (not waitlisted). For further lab information, see the lab syllabus.
8. **Lecture examinations are: Monday Sept. 28 and Monday Nov. 2 from 8-9 AM (morning exam).** There are no make-up exams. A handout will be given in lecture concerning each exam.
9. **Final Examination: Monday Dec. 14 at 7-10 PM.** Room(s) to be arranged. The final exam will be comprehensive and will cover all lectures. You will receive a handout in lecture regarding specific details about the final (point distribution, weighting, etc.).
10. In the case of disruption of an exam (fire alarm, bomb threat, etc.) alternative arrangements have been made. These may include moving the exam to another location, and/or extending the time, and/or arranging an alternative exam date or format (possibly essay).
11. Lab exams are scheduled as follows: Lab exam 1; Th 10/8 from 7:30-9 PM, Lab exam 2; Wed 10/28 from 8-10 PM, Lab exam 3: Thursday 12/3 from 8:30-10 PM. Room(s) to be arranged. There are no make-up lab exams. A handout will be available on-line concerning each exam – room assignments, material covered, etc. There is NO additional final exam for the lab class.
12. Assignments, exams: When papers, etc. are returned it is your responsibility to pick them up. If you do not attend discussion, then you must contact your GSI and get the papers from them, at their convenience. Papers not picked up after 3 weeks may be discarded.

REQUIRED LECTURE MATERIALS:

Textbook: **Campbell Biology, 10th edition including Mastering Biology and Learning Catalytics.** You will need the 10th edition and the electronic resources for the graded assignments.

iClicker transmitter. You must have your own individual iClicker.

Course Reader(s): Required course readers will be available on bCourses and most likely also available at Replica Copy.

Exam Reader: An exam reader with exams from past semesters is available at Replica Copy. The cost is about $4.00.

GRADING PROCEDURE: Grades will be determined numerically as follows:

Midterm Examinations (2 x 100)	200 points
Final Exam	300 points
iClicker (3 X 12), Mastering Biology (3 X 24)	108 points
Total:	608 points

Changes affecting the point distribution, the reading schedule, or other aspects of the syllabus may occur during the semester. We will inform you of any changes. Letter grades are based upon EARNED points (not based upon needs or wants). They are guaranteed as follows.

A (some form of an A)	100-90%	D (some form of a D)	69-60%
B (some form of a B)	89-80%	F	59-00%
C (some form of a C)	79-70%		

However, in the event that some examinations have been unusually difficult, the cut offs for letter grades may be lowered (but only by a few percentage points, and as deemed necessary). Historically around 40-50% of the class **EARN** A's and B's.

iClicker points – Each question is worth ½ pt for participation and an additional ½ pt for the correct answer. You can earn up to a MAXIMUM of 12 points per lecturer. Each lecturer will attempt to have at least 14 iClicker questions for their section. If for some reason, there aren't enough iClicker points then any remaining points will be added to the final. **It is your responsibility to register your iClicker and provide a functional iClicker.**

Electronic Assignments. Mastering Biology. The url for the online homework system is MBPauly03498. You will need to have a "Purchase Code" which is available in the book purchased from Cal Student Store or The Student Store. A distribution of student scores in Mastering Biology will be generated and a grade scale from 0 to 26 points will be assigned. The maximum possible number of points will be 24. Thus if you have 18.5/26 of the total points you will get 18.5 points. If you had 25.2/26 of the total points you will get 24 points (the maximum). Thus it is possible for you to miss one or two assignments and still end up with the maximum. Each assignment is typically due by **8 AM of the start of the next lecture**. Extensions may be made as deemed necessary but the extension will be for the entire class, not just a few individuals. No extensions of deadlines. Each professor has their own set of **Mastering Biology** assignments but all .

I GRADES: An "incomplete" can only be given if (1) the student has completed at least one-half of the material with a passing grade of C or better and (2) the student presents documented medical evidence of an inability to complete the course on schedule. The student assigned an I grade in Biology 1A must complete the work before the first day of classes in the Fall Semester of 2016, without including the course for units on the study list, or the I lapses to an F.

CHEATING: UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others". As a UCB student you pledge to adhere to this code. The rare student found cheating in the course will be reported to the University. The student will be given an F course grade. Cheating is not tolerated. This includes **ALL** work—iClicker, homework assignments, pre-labs, worksheets, quizzes, and exams!

HOW TO DO WELL

1. Come to lectures and take notes. Make sure you review them.
2. Keep up with the material. It is essential that you do not fall behind. Seek help if needed.
3. Clarify topics you do not understand by
   a. Coming to faculty office hours and ask questions.
   b. Coming to GSI office hours and ask questions.
   c. Getting into a study group.
   d. Reading the book.
   e. Using email to ask the faculty questions.
4. Use the exam reader, making sure you understand the reasoning behind the answers.
5. Come to the exam review sessions and ask questions.
6. Come to discussion with questions.

Faculty evaluations. Your input is important and valuable. Ten minutes of each faculty's last lecture will be set aside for you to complete the evaluations.

1. Dr. Pauly 9/13-27 for evaluations. 10 minutes will be provided on 9/25 for evaluations.
2. Dr. Fischer 10/18-11/1 for evaluations. 10 minutes will be provided on 10/28 for evaluations.
3. Dr. Welch 11/22-12/13 for evaluations. 10 minutes will be provided on 12/4 for evaluations.

BIOLOGY 1A STUDY RESOURCES
The following is a partial list. Please take advantage of these resources. Additional opportunities such as faculty & graduate student reviews may also occur during the semester. Further information is available in the lab manual and in the exam reader.

Faculty Office Hr's: Office hours are M/W 9-10 in 56 Hildebrand and Th 2-3 in 2066 VLSB unless otherwise noted.

Academic Coordinator Office Hr's (2088 VLSB)**:** M 11-12, W 11:30-12:30.

Graduate Student Instructors Office Hr's (2084 VLSB): Usually M- F, 10 - 2. Refer to bCourses for up to date hours.

Student Learning Center (SLC, 189 Chavez Student Center): The SLC offers student-led study groups and tutoring. Study groups require registration that can be done on SLC's webpage **(slc.berkeley.edu**). See the SLC's webpage for more information. **Note:** None of the SLC's services are a substitute for lecture, discussion, reading the text, or attending Bio 1A office hours. However, they are another way to get additional assistance and feedback from trained undergraduate tutors who want to assist you in meeting your academic goals.

STUDY GROUPS: These are a great way to learn the material. Form your own study group.

Tutor Services (fee): Formal tutoring (variable fees) from individuals may be available as the semester progresses. Contact Mike.

Biology 1A Web Sites: mostly bCourses and http://mcb.berkeley.edu/courses/bio1a.

Schedule of Classes

Section	Disc. Time	Disc. Room		Section	Disc. Time	Disc. Room	
101	*M 11-12 PM*	*2030 VLSB*		*202*	*T 11-12 PM*	*321 Haviland*	
102	*M 11-12 PM*	*2038 VLSB*		*205*	*T 1- 2 PM*	*183 Dwinelle*	
103	*M 11-12 PM*	*2011 VLSB*		*206*	*T 1- 2 PM*	*2066 VLSB*	
104	*M 11-12 PM*	*2032 VLSB*		*207*	*T 2- 3 PM*	*2062 VLSB*	
105	*M 12- 1 PM*	*174 Barrows*		*208*	*T 2- 3 PM*	*2038 VLSB*	
106	*M 12- 1 PM*	*2032 VLSB*		*210*	*T 3- 4 PM*	*2070 VLSB*	
107	*M 12- 1 PM*	*104 Barrows*		*211*	*T 4- 5 PM*	*251 Dwinelle*	
108	*M 1- 2 PM*	*104 Barrows*					
109	*M 1- 2 PM*	*100 Wheeler*					
110	*M 1- 2 PM*	*2062 VLSB*					
111	*M 2- 3 PM*	*2062 VLSB*					
112	*M 2- 3 PM*	*2038 VLSB*					
114	*M 3- 4 PM*	*2032 VLSB*					
115	*M 3- 4 PM*	*2038 VLSB*					
116	*M 4- 5 PM*	*2070 VLSB*					
118	*M 4- 5 PM*	*2038 VLSB*					
119	*M 4- 5 PM*	*2062 VLSB*					

Biology 1A Calendar, Fall 2015

Lectures 1-13 Professor Pauly, Lectures 14-26 Professor Fischer, Lectures 27-38 Professor Matthew Welch.
All readings are from the **10th edition of Campbell's Biology by Reece et al.**

Date	***Lect #***	***Lecture Topic***	***Reading***	***Bio 1AL Lab, Discussion***
Aug. 26	1	Atoms and water: key concepts	Ch. 2 & 3	
Aug. 28	2	Carbon Chemistry and Macromolecules	Chs. 4 & 5	
Aug. 31	3	Carbohydrates, Nucleic acids, Proteins, and Lipids	Ch 5: 66-87	Safety, Equipment.
Sept. 2	4	Cell structure, part 1	Ch 6: 93-108	
Sept. 4	5	Cell structure, part 2	Ch 6: 109-120	
		*Deadline to drop = Sept. 4		
Sept. 7		HOLIDAY		**No lab.**
Sept. 9	6	Membrane structure and function	Ch 7: 124-140	
Sept. 11	7	Metabolism: energetics	Ch 8: 141-151	
		*Deadline to add without a fee = Sept. 10.		
Sept. 14	8	Metabolism: enzymes	Ch 8: 151-161	Cells, *Vibrio* isolation.
Sept. 16	9	Photosynthesis: light reactions	Ch 10: 185-198	
Sept. 18	10	Photosynthesis: carbon reactions	Ch 10: 198-209	
Sept. 21	11	Cellular respiration: glycolysis, fermentation.	Ch 9: 162-169, 177 -179	Enzymes, *Vibrio* isolation.
Sept. 23	12	Cellular respiration: TCA, oxidative phosphory (Evaluation 15')	Ch 9: 169-176, 180-184	
Sept. 25*	13	Cell cycle and 10 minutes for evals	Ch 12: 232-250	
		*Deadline to add, change from P/NP to letter grade.		
Sept. 28		**MIDTERM 1: Lectures 1-13.**	See handout.	Photosynthesis, *Vibrio* Isolation.
Sept. 30	14	Meiosis and sexual life cycles	Ch 13	
Oct. 2	15	Mendel and the gene idea	Ch 14	
Oct. 5	16	The chromosomal basis of inheritance	Ch 15	Complementation I, PCR & GMB I. ***LAB EXAM 1***
Oct. 7	17	DNA – the molecular basis of inheritance	Ch 16	
Oct. 8		***Th. LAB EXAM 1: 7:30- 9 PM.***	***Exam Handout.***	
Oct. 9	18	Gene expression – from gene to protein	Ch 17	
Oct. 12	19	Regulation of prokaryote gene expression	Ch 18	Complementation II, PCR analysis & GMB II.
Oct. 14	20	Regulation of eukaryote gene expression	Ch 18	
Oct. 16	21	Viruses	Ch 19	
Oct. 19	22	DNA tools and Biotechnology	Ch 20	Complementation III & Bioinformatics.
Oct. 21	23	DNA tools and Biotechnology	Ch 20	
Oct. 23	24	Genome Organization	Ch 21	

Date	***Lect #***	***Lecture Topic***	***Reading***	***Bio 1AL Lab, Discussion***
Oct. 26	25	Gene cloning and analysis	Ch 21	Vertebrate Anatomy. ***LAB EXAM 2***
Oct. 28	26	Genome evolution and 10 minutes for evals	Ch 21	
Oct. 28		***Wed. LAB EXAM 2: 8:00- 10 PM.***	***Exam Handout.***	
Oct. 30*	27	Cell signaling	Ch. 11	
Nov. 2		**MIDTERM 2: Lectures 14-26.**	See handout.	Human Genetics and Sensory Systems
Nov. 4	28	Development 1	Ch. 20	
Nov. 6	29	Development 2	Ch. 21 and 47	
Nov. 9	30	Animal form and function	Ch. 40	No lab lecture. No lab.
Nov. 11		HOLIDAY		
Nov. 13	31	Animal nutrition	Ch. 41	
Nov. 16	32	Circulation and respiration	Ch. 42	Reproduction and development.
Nov. 18	33	Osmoregulation and excretion	Ch. 44	
Nov. 20	34	Hormones and the endocrine system	Ch. 45	
Nov. 23	35	The immune system	Ch. 43	No lab lecture. No lab.
Nov. 25		HOLIDAY		
Nov. 27		HOLIDAY		
Nov. 30	36	The Neurons, synapse, signaling	Ch. 48	Lab Exam 3 Review. ***LAB EXAM 3***
Dec. 2	37	The nervous system	Ch. 49	
Dec. 3		***Th. LAB EXAM 3: 8:30- 10 PM.***	***Exam Handout.***	
Dec. 4	38	Sensory and motor mechanisms	Ch. 50	
Dec. 14		**FINAL EXAM 7-10 PM**	Exam Handout	Dec. 14

Note: look at the final exam handout carefully for your assigned seating within a section. It will be critical that you take your place quickly since there is only 30 minutes between exams and there will be assigned.