LS102 - ATTRIBUTES OF LIVING SYSTEMS - FALL 2009 - Section 3

Instructors: Marinus Pilon & Elizabeth Pilon-Smits, Biology Department.
Office: E416/E413 Anatomy/Zoology Building. **Phone:** 491-0803 (MP)/491-4991 (EPS)**; Email:** pilon@lamar.colostate.edu (MP), epsmits@lamar.colostate.edu (EPS), or over the RAMCT mail system (preferred).
Office hours are Mon, 3 - 5 pm, or by appointment.

COURSE OBJECTIVES

LSCC102 is an introductory biology course. The objective of this course is to give an overview of the common features of living organisms. The course focuses on cell biology, genetics and evolution. LS102 provides a basis for further courses in life sciences. The course meets for three 50 min. lectures per week (MWF 2 – 2.50 p.m., A101 Clark) and one 3-hour laboratory session per week in the Yates Building. You should be signed up for a lab. If labs are full keep trying to register on RamWeb - some places will open up in the first weeks as others drop. No overrides are given if labs are full (fire regulations)

TEXT & WEBSITE

* Textbook: **Biology**, 8th ed. (2009), by Campbell and Reece, chapters 1-24 (first half). You can buy either the full book or the first half of the book for half price. The second half of the same book is used in LS103.
* Optional: Mastering biology - online addendum to the book with animations, practice questions, helpdesk, and online text. Comes free with a new 8th ed. book (not with a used one or older edition). Mastering biology is also sold separately, and so is a CD of the book.
* Laboratory Manual: "Life 102: Attributes of Living Systems, a Lab Manual; 6th edition", by Weedman, published by Cache House.
* Course website. Access the website at: **https://ramct.colostate.edu/**

Note: You will need an **eID** (electronic ID at CSU, consisting of a username and a password) to access the website. If you are registered, the course will appear in your myRamCT listing.

EXAMS

There will be five exams: 4 midterm exams (40 multiple choice questions in 50 min) and one comprehensive final exam (80 multiple choice questions in 2 h). The lowest **mid-term** grade will be dropped automatically. The final exam grade is never dropped. If you have a justified reason to miss a second exam, contact the instructor for the option to take a makeup exam.

GRADING

Your final grade will be based on your exam results for the lecture part (75%) and your lab performance (25%). After the four midterm exams, your lowest grade will be dropped and the remaining three midterm grades will be averaged. This constitutes 50% of your final grade. The final exam will be 25% of your final grade, and your lab result the other 25%.

Grading scale: conventional. no curving, no individual extra credit

Score	Grade	Score	Grade
90 - 100%	A	60.0 - 70%	D
80 - 90%	B	< 60%	F
70 - 80%	C		

STUDY HELP. If anything is not clear, ask your lecture instructor or your lab instructor. Email questions or drop by in A/Z E416/413. There are also special LS102 tutors available. The RamCT course website has all slides shown during lectures, old exams, this syllabus, grades, a bulletin board, and other good stuff, so use it to your advantage. Mastering biology can also be helpful so check it out and let us know how you like it.

COURSE OUTLINE

Lecture part: *there will be five sections, each followed by an exam.*
Section I: Components of the cell (Ch. 1-6)
Section II: Cellular processes (Ch. 7-10)
Section III: Cellular reproduction and classical genetics (Ch. 12-15)
Section IV: Molecular genetics (Ch. 16-20)
Section V: Genomes, population genetics and evolution (Ch. 21-24)
Laboratory: see separate lab syllabus. *Labs are mandatory and meet every week.*
There will be NO labs the first week of classes, nor in the week of labor day.

Planned lecture and exam schedule:

Date	Lecture Topic	Book Reading *Chapter*
8/24	Introduction	1
8/26	Chemistry of life	2
8/28	Properties of water	3
8/31	Organic compounds	4
9/2	Macromolecules I	5
9/4	Macromolecules II	5
9/7	**Labor Day , No class**	
9/9	A tour of the cell I	6
9/11	A tour of the cell II	6
9/14	A tour of the cell III	6
9/16	Review - Section I	
9/18	**First exam** - Section I	
9/21	Membranes I	7
9/23	Membranes II	7
9/25	Metabolism I	8
9/28	Metabolism II	8
9/30	Respiration I	9
10/2	Respiration II	9
10/5	Photosynthesis I	10
10/7	Photosynthesis II	10

Planned lecture and exam schedule (cont.)

Date	Topic	Reading
10/9	Review - Section II	
10/12	**Second exam** - Section II	
10/14	Mitosis	12
10/16	Meiosis	13
10/19	Genetics I	14
(last day of W-Drop period)		
10/21	Genetics II	14
10/23	Genetics III	15
10/27	Genetics IV	15
10/29	Review - Section III	
10/31	**Third exam** - Section III	
11/2	DNA structure, replication	16
11/4	DNA -> RNA -> protein I	17
11/6	DNA -> RNA -> protein II	17
11/9	DNA -> RNA ->protein III	17
11/11	Gene expression	18
11/13	Viruses	19
11/16	DNA technology I	20
11/18	DNA technology II	20
11/20	**Fourth exam** -Section IV	
11/21 - 11/29	**Thanksgiving holiday: no classes, no labs**	
11/30	Genomes	21
12/2	Evolution principles	22
12/4	Population biology I	23
12/6	Population biology II	23
12/8	Origin of species	24
12/10	Review	

12/15, 9:10-11:10am, A101 Clark: **Final exam** - Section 5 (half of the questions) + Sections 1-4 (half of the questions)

Tips on how to do well in LS102

This is a difficult class for many students because the pace is high and so much is covered. The exams will not be easy, so study hard! A rule of thumb is 2-3 hours of home study for every hour in class.
Go to each lecture, be there in time. The earlier you are, the more chance you have to sit in the front so you can hear and see better and are not distracted so much. The slides are all on the course website in handout format. You can take them to class and write additional notes on there. After class, read the book and go over your notes. If you have questions, ask them to one of your instructors. For more information you can also check out Mastering biology, which comes with the (new) book.

When studying for the exam: The exams will be about everything presented in class, and nothing more. There will be "lecture notes" on the web that will be helpful when studying. All the key terms are defined. Practice questions are an important study tool. Be sure to go over the listed questions. Expect to study a minimum of 25h for each exam - so don't wait until the last evening!
It can help to write summaries, and to practice reproducing figures and processes from the top of your head. Also, you can imagine you are teaching the material to someone, and practice this out loud. Repeat these processes until you feel that you fully understand the material, and can answer both memorizing questions and insight questions.
When you think you are ready, test yourself by making the old exams on the course website. Go to review sessions before exams, which are very helpful. Example questions are shown there, and you can ask general questions.

During the exam, read each question carefully and after you are done, check all the answers again. Don't forget your student ID and a pencil. Cheating has dire consequences, plus you sabotage your own learning so don't even think about it.

For the final exam: collect all your midterm exams (1-4) and their keys on RamCT. Go over each question, especially the ones you had wrong. Make sure you understand why the right answer is correct. 40 questions in the final exam are going to be (modified) old questions.

Every year there are some students who have a hard time in this class, performing less well than they expected based on their performance in previous schools. The class average performance level at CSU may be higher than at your high school. The level of difficulty may also be higher than you're used to, and definitely the pace will be higher. Don't get behind: you may not be able to catch up. This is a pretty tough course. For non-majors who only need a course to fulfill their science requirement: other courses are recommended (e.g. BZ101, BZ104-105). This will save you some hard work and will open up a space for someone who does need the course for their major.

We hope that you will learn a lot, enjoy this class and your entire stay here at CSU. Welcome to LS102, have a great semester!

Marinus Pilon, Elizabeth Pilon-Smits, instructors.