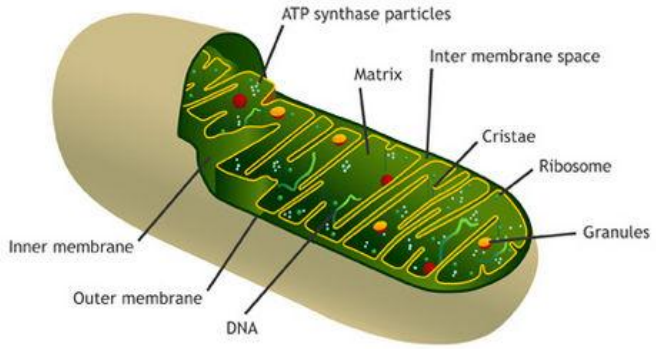
Syllabus -- BIO 766 – Spring 2013
Advanced Topics
for Graduate Students in Biology & Microbiology

Bulletin course description: Recent advances in biological science examined in detail. Content varies with offering. May be repeated for a total of six (6) credits. *2 units (crs.)*



Content topic: The influence of cellular mitochondria on evolution of life forms, centered on the required text entitled *Power, Sex, & Suicide: Mitochondria and the Meaning of Life*. Based upon the level of cellular and molecular biology taught in Bio 105 and 323.

Instructor: Dana Merriman HS 249 merrimad@uwosh.edu 424-3076

Class time: Thurs 10-12 HS 456

Office hrs: Mon 9-10 am Tue 9:30-10:30 am Wed 1:50-2:50 pm

Apptmts: Sign up on my office door. If nothing there works, email me.

Textbook: Nick Lane's book, *Power, Sex, and Suicide*, available in paperback.
PLEASE READ PAGES 3-18, TAKE NOTES & PHOTOCOPY THEM, FOR FIRST CLASS MEETING!

STUDENTS WITH DISABILITIES ARE WELCOME IN THIS COURSE. There is a form for you to fill and hand in to me posted on D2L. Please see me at my office during the first week of the semester to hand in this form and make sure I understand your needs.

ACADEMIC HONESTY policies are clearly defined at this University and all students are expected to abide by them. Penalties for violations are severe. Cheating on an exam (including looking at someone else's paper) at a MINIMUM leads to zero on that exam, with no opportunity for a make-up or extra credit. A second offense is an F in the course and a report to Dean of Students.

EMAIL & D2L POLICY: I use campus email and D2L to communicate with my classes. Please check BOTH frequently for updates and make sure your email doesn't send "Bio 766" messages to spam. If you need help forwarding your campus email inbox to some other inbox (*e.g.* Yahoo or Gmail), consult the Help Desk at any Computer Lab. I also like to answer questions on the D2L Discussion board RATHER than via email.

	Date:	Topic list:	To read ahead:	Graded on:
1	Jan 31	Course orientation & demonstration of expectations	Intro pp. 3-18	
2	Feb 7	Origin of Eukaryotic Cell	Ch. 1-2	Preparation Participation
3	Feb 14	Origin of Eukaryotic Cell, Proton Power & Origin of Life	Ch. 3-4	Preparation Participation
4	Feb 21	Proton Power & Origin of Life	Ch. 5-6	Preparation Participation
5	Feb 28	Exam 1		
6	Mar 7	Foundations of Complexity	Ch. 7-8	Preparation Participation
7	Mar 14	Size and the Ramp of Ascending Complexity	Ch. 9-10	Preparation Participation
	Mar 21	NO CLASS, spring break		
8	Mar 28	Troubled Birth of the Individual	Ch. 11-12	Preparation Participation
9	Apr 4	Exam 2		
10	Apr 11	Battle of the Sexes	Ch. 13-14	Preparation Participation
11	Apr 18	Battle of the Sexes, Clock of Life	Ch. 15-16	Preparation Participation
12	Apr 25	Clock of Life	Ch. 17-18	Preparation Participation
13	May 2	Epilogue	Pages 312-320	Preparation Participation
14	May 9	Exam 3		

Objectives: Advanced topics are meant to "stretch" Master's students beyond their base undergraduate education. That stretching comes two ways: (a) advanced content and (b) advanced process. You all learned a bit about mitochondria and cellular respiration (Krebs/TCA/CAC cycle + electron transport chain) in Bio 105 and 323. We'll go beyond that in content but more importantly, a Master's student is expected to attain a more advanced ability for the *analysis* of ideas. You take more responsibility for your learning by drawing connections between ideas and by identifying gaps in knowledge.

In this course, you can expect to:

- Improve your ability to read and discuss advanced science with your peers;
- Learn new cellular/molecular/evolutionary vocabulary;
- Learn to identify connections between and open questions from written work;
- Improve your ability to research the peer-reviewed literature to see how those questions may have been answered since the work was published (in our case, since 2005).

Expectations of students:

Prior to class:

- Read the assigned pages ahead of each class
- Do any research asked of you by the instructor and prepare to briefly present it
- Take handwritten notes on the reading, especially:
  - Vocabulary that is new to you (look up and add definitions)
  - Take home messages the author is giving you
  - Connections with earlier points (more of these as the semester goes on)
  - Unanswered questions posed by author and yourself (you may be asked to look a couple of the answers up during the semester as "participation homework")

During class:

- Bring a photocopy of your handwritten notes on the reading (this COPY will be handed in to your instructor for partial "Preparation" grade; keep the original for yourself)
- Refer to your original notes on the reading during discussions
- Contribute voluntarily and equitably ("Participation" grade)
- Take notes on other people's contributions and on connections made during class (you will need these to prepare for exams)

Grading is by a points system:

Preparation of the reading, 10 points per chapter x 18 chapters =	180
Participation in discussion, 20 points per discussion x 10 discussions =	200
Exam 1:	200
Exam 2:	200
Exam 3:	220
	1,000

Exams will be multi-choice, definitions, fill in the blank, short essays.

You may bring your own personal copy of the "Power" textbook to any exam, but you may not bring any notes or share your book with anyone else.

There is NO opportunity for extra credit in this course.

If you miss a class for any reason, you get a zero for Preparation and Participation for that day. In addition, you may not do very well on the next exam.

With an approved excuse (illness, bereavement, employment, athletics, military duty), you may hand in reading notes by noon on the following Monday to get a second chance at some Preparation points ONLY.

Final Course Grades: Cut-offs are firm. Just because you are within 0.1 percentage point of the next higher grade is not sufficient reason for me to move you up.

Letter	Percentage	Gradepoints
A	92.0-100	4.00
A-	90.0-91.9	3.67
B+	88.0-89.9	3.33
B	82.0-87.9	3.00
B-	80.0-81.9	2.67
C+	78.0-79.9	2.33
C	72.0-77.9	2.00
C-	70.0-71.9	1.67
D+	68.0-69.9	1.33
D	62.0-67.9	1.00
D-	60.0-61.9	0.67
F (Failure)	<60.0	0.00