

## BIO 104 – BIOLOGICAL DIVERSITY I: KINGDOMS OF ORGANISMS

### INSTRUCTORS:

Robert Slocum (S)	HS G46	337-6303	<a href="mailto:bslocum@goucher.edu">bslocum@goucher.edu</a>	Lecture / TH PM Lab
Mark Hiller (H)	HS G42	337-6306	<a href="mailto:mhiller@goucher.edu">mhiller@goucher.edu</a>	Lecture
Jackie Andrews (A)	HS G83	337-6304	<a href="mailto:jandrews@goucher.edu">jandrews@goucher.edu</a>	Lecture / Lab Director

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REQUIRED TEXTS: Hickman, C.P., Roberts, L.S., Larson, A., L'Anson, H. and Eisenhour, D.J. (2008) *Integrated Principles of Zoology*, 14<sup>th</sup> ed., McGraw-Hill Publishing, New York, NY (ISBN 978-0-07-297004-3)

Starr C., Taggart R. Evers C., and Starr L. (2009) *Biology: The Unity and Diversity of Life*, 12th ed., Brooks/Cole, Belmont, CA. (ISBN 0-495-55792-7)

OPTIONAL TEXT: McMillan, V.F. (2006) *Writing Papers in the Biological Sciences*, 4<sup>th</sup> ed., St. Martin's Press, New York (ISBN 0-312-44083-9)

### TEXTBOOK OPTIONS:

Students may purchase new or used textbooks at the College Bookstore. Another option for textbook purchases at reduced prices is websites like Half.com ([www.half.ebay.com/](http://www.half.ebay.com/)) or Amazon.com ([www.amazon.com/](http://www.amazon.com/); "Textbooks" link). New and used texts may also be rented from companies like Chegg.com ([www.chegg.com/](http://www.chegg.com/)) CampusBookRentals.com ([www.campusbookrentals.com/](http://www.campusbookrentals.com/)). A good website for comparison pricing of texts is Bookfinder.com ([www.bookfinder.com/](http://www.bookfinder.com/)).

Some texts are also available for purchase as ebooks or individual e chapters (e.g., iChapters.com; [www.ichapters.com/market/index.html](http://www.ichapters.com/market/index.html)). As of June 2009, the nine Starr *et al.* (2009) chapters listed as suggested readings (Chapters 21-25; 29-32) may be purchased at iChapters.com for \$3.49 each, for a total cost of about \$32. The entire eBook is available for about \$95. The hard cover text may be purchased from Half.com for about \$110 (like-new) or \$140 (new), compared with the list price of \$189. At this time, the Hickman *et al.* (2008) and McMillan (2006) texts are not available as ebooks or e chapters.

When making purchase cost comparisons, the student should consider that the eBooks and eChapters are single-use purchases, while new or used copies of printed textbooks may be resold, often for at least half of the original purchase price at Half.com, or similar online sites.

We try to use an edition of a text for several years, if possible. It is usually possible to purchase earlier editions of texts for reduced cost. Changes between editions are often minimal. Page numbers for suggested readings from the most recent edition (listed in your syllabus) may differ slightly from those in earlier editions, but this should pose little problem for the student.

ATTENDANCE: Students are expected to attend all lectures and laboratories.

**Exams:** Missed exams may be rescheduled ONLY at the discretion of the instructor. See "EXAMINATIONS" below for more information on this policy.

**Laboratories:** Because many of the living organisms examined in lab are viable only for short periods of time, it may not be possible to make up missed lab work. Notify your lab instructor ahead of time if you know you will miss a lab. It is often possible to attend another lab section during the same week.

WEB RESOURCES: All lecture materials (PowerPoint files, copies of previous exams, study guides, web site links, etc.) will be posted to the course BlackBoard site (<http://blackboard.goucher.edu>). Open the "Biological Diversity I-Kingdoms of Organisms" link. All materials will be placed within the "Course Information" folder in the Content section.

In addition, pre-lab quizzes will be posted weekly on BlackBoard. Your lab instructor will provide additional information about taking the on-line quizzes.

CELL PHONES: If it rings once, you'll be asked to leave the class. If it rings a second time during the semester, you'll be asked to drop the course. No exceptions. The best "call" is to turn it off before entering the classroom. If emergency calls must be received in class, set phone to "vibrate" and take the call outside of the classroom.

ACADEMIC HONOR CODE:

All students are bound by the standards of the Academic Honor Code, found at <http://www.goucher.edu/documents/General/AcademicHonorCode.pdf>

LABORATORIES: Laboratories meet in HS G27. This room is available for student use Monday through Friday. Students are expected to have read assigned laboratory materials before lab and to report promptly at the beginning of each laboratory period. **Late attendance and unexcused absences will adversely affect grades.**

Laboratory grades will be based on notebooks, written reports, quizzes and overall performance. Written assignments must be turned in on time **at the beginning of class**. Grades on work turned in late will be penalized **five points per working day**. Late work **will not** be accepted after other papers have been graded and returned.

Due to the nature of our curriculum, laboratory exercises frequently require students to work with live organisms. **If, for any reason, you do not want to work with live organisms, you should consider dropping this course.**

EXAMINATIONS: There will be four lecture exams; their dates are listed in the lecture schedule. The exams will emphasize materials covered in lectures, laboratories and assigned readings. If you are unable to attend an exam, you may request an early exam. In case of illness or emergency, contact one of the instructors BEFORE the exam. Missed exams may be rescheduled only for valid reasons, at the discretion of the instructor.

FINAL GRADES: Grades will be determined as follows:

Lecture exams:	50%*
Laboratory grade	30%
Final exam	20%

\* There are four lecture exams. Three exams count for 15% each of the final grade; the lowest lecture exam counts for 5% of the final grade (for a total of 50%).

## LECTURE SCHEDULE – FALL 2009

Week	Day	Date	Topic	Suggested Readings
1	W F	Sept. 2 4	Introduction; Basic needs; Energy and metabolism (S) Properties, living organisms; Origins of life (S)	Hickman Ch. 1 Hickman, Ch. 2
2	M W F	Sept. 7 9 11	<b>LABOR DAY – NO CLASSES</b> Five Kingdoms overview/Classification systems/Intro. to Prokaryotes (S) Prokaryotes I-Structure & function/Extremophiles (S)	Hickman 199-206 S&T, Ch. 21 S&T, Ch. 4: 60-61
3	M W F	Sept. 14 16 18	Prokaryotes II - Extremophiles Prokaryotes III-Human Relevance / Origin of eukaryotic cells, Endosymbiosis theory (S) The Eukaryotic Cell: Structure and Function (A)	Hickman, p. 37-52 S&T, Ch. 4:56-59; 62-75
4	M W F	Sept. 21 23 25	Protists I - Autotrophs (H) Protists II - Heterotrophs (H) <b>EXAM I</b>	S&T, Ch. 22
5	M W F	Sept. 28 30 2	DNA replication; Mitosis (H) Meiosis (H) Central dogma (H)	Hickman, p. 52-57; 88-90
6	M W F	Oct. 5 7 9	Fungi I: Major groups, characteristics, fungal nutrition and nutrient recycling; use in food and beverage industry Fungi II – causal agents of plant and animal diseases; antibiotics; lichens Plant adaptations: Growth in terrestrial environments (S)	Hickman, 75-78, S&T, Ch. 24 “ “ S&T, Ch 29.1-29.6
7	M W F	Oct. 12 14 16	Vascular plants: stems, roots and leaves (S) Evolutionary trends in plant reproduction (S) <b>EXAM II</b>	S&T, Ch. 32.1 S&T, Ch. 31
8	M W F	Oct. 19 21 23	<b>MID SEMESTER BREAK – NO CLASSES</b> The fruits of plant labor – food for thought! Movie: <i>Close up Photography Reveals the Mysteries of Pollination</i> (S) Photosynthesis and respiration I (S)	S&T, Ch. 23
9	M W F	Oct. 26 28 30	Photosynthesis and Respiration II (S) Plant growth and development I (S) Plant growth and development II (S)	S&T, Ch. 23 S&T, Ch. 32.2-32.8

Week	Day	Date	Topic	Suggested Readings
10	M W  F	Nov. 2 4 Nov. 6	Plants: Human relevance and Biotechnology (S) Porifera: The sponges (H) Introduction to Eumetazoa and to Ctenophora and Cnidarians (Hydrozoa and Scyphozoa): Jellies of the Deep (H)	Hickman, p. 246-257 Hickman, Ch. 13
11	M W F	Nov. 9 11 13	Cnidarians II. Anthozoa: Anemones and Coral Reefs (H) Worms and the evolution of body cavities (H) <b>EXAM III</b>	Hickman, Ch. 13 Hickman, p. 290-298, 307-311
12	M W F	Nov. 16 18 20	Annelids: Segmented worms and the nature of segmentation in body plans (H) Parasitic worms (H) Arthropods I: Basic features and Arachnids (H)	Hickman, Ch. 17 Hickman, p. 298-307, 308-312 Hickman, Ch. 19
13	M W F	Nov. 23 25 27	Arthropods II: Crustacea (H) <b>THANKSGIVING BREAK</b> <b>ENJOY YOUR HOLIDAY!</b>	Hickman, Ch. 20
14	M W F	Nov. 30 2 4	Arthropods III: Insects and flight (H) Molluscs I: Gastropods and Bivalves (H) <b>EXAM IV</b>	Hickman, Ch. 21 Hickman, p. 331-353
15	M W Tu	Dec. 7 9 15	Molluscs II: Cephalopods: The pinnacle of invertebrate evolution (H) Overview and evolutionary patterns (H) <b>FINAL EXAM (3-5 PM, Kelly Lecture Hall)</b>	Hickman, p. 353-361 Hickman, p. 159-175