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LOGISTICS: 312 BUNN  
Cathy Randall  
BUNN 312, 6295,  
Cathy_Randall@hotmail.com

LECTURE SCHEDULE:  SCHAIBLE AUD.  
Mon. and Wed. eve, Lect. 5:15-6:45 p.m.  
Mon. 7 p.m., TA Lab. Prep, Bunn. 316  
Wed. eve., TA Exam Grading, Conf. Rm.

LAB SCHEDULE:  308 BUNN  
FE1: T 9 - noon,  
FE2: T 1 - 4 pm,  
FE3: T 6 - 9 pm,

TEXT, STUDENT GUIDE & WORKBOOKS:  
BIOLOGY: The Unity and Diversity of Life, 8th Ed., C. Starr & R. Taggart,  
Wadsworth Publishing Co.  
Study Guide & Workbook: An interactive approach, for Starr & Taggart’s  
Biology: The Unity and Diversity of Life, 8th Ed. J.B. Taylor & J.D. Jackson.  
Wadsworth Publishing Co.  
Answers to End-of-Chapter Review Questions, for Starr & Taggart’s Biology:  
The Unity and Diversity of Life, 8th Ed.

LIBRARY RESERVE:  
One copy of our textbook, Student Guide & Workbook, Answers to End-of-Chapter  
Review Questions, copies of note sets, are on Reserve in the Rasmussen Library for your  
convenience.

COURSE DESCRIPTION:  
Biology 103 (Biology and Society) is a one-semester, 4-credit, laboratory “survey”  
course for students who are non-majors in the natural sciences. This is not a “watered-down”  
biology course, nor is it a non-rigorous science core curriculum course. It does meet the  
BREADTH option for a Natural Science requirement for graduation as a laboratory science course.  
It will be comprehensive, but its content will be made applicable, relevant, exciting, and  
palatable for you, the HUMAN organism. This instructor is acutely aware of true science  
"anxiety, phobia, and real fears of science", perhaps incited by lack of subject exposure, poor early  
high school experiences, having had your last science class “eons” ago, or “subject” learning  
disability, which we probably all share! We understand your fear, if present, in taking this class,  
but will work very hard to make this a wonderful, event-filled, and meaningful experience for you.

Our course is intended to introduce the nature and mechanics (Structure and Function) of  
living organisms to non-scientists. You will, however, learn more than the mere “science of  
life” in our course. You will be exposed to the sciences of chemistry, physics, geology,  
speech, art, art-history, history, and drama: all of which are integrated into the fabric,  
function, structure, and existence of living things. You will be asked to ponder and noodle  
philosophical and ethical questions that confront you, me, scientists, and all of society today. We  
shall contemplate characteristics of living organisms, how organisms are organized, the functional  
complexities of becoming too large, the nature of procreation, evolution, abortion, and creation,  
etc. Basically, there are endless topics to investigate and we will peer into lots of them. We will
largely cover the content of our entire text in four thematic units defined by our four exams. We will not cover ALL chapters in our text, BIOLOGY: The Unity and Diversity of Life, 8th Edition, by Starr and Taggart, may “glide” through others, “dissect” a few in detail, or repeatedly come back to one or more chapters thematically. It is an easily read text. READ IT!!.

Buckle up! We are about to launch into this experience in total and virtual reality together!

Scientists have amassed an incredible amount of understanding about living systems over the past three hundred years. So much so that it is tempting to fill you with the many, many “facts.” We will resist that temptation, however, and fill you instead with wonder by asking lots of questions. Biological concepts, tempered with a healthy dose of factual content, a search for understanding, and laboratory experiences meant to enlighten, will be our theme. Whenever possible, we pose questions to help you understand how the methods of science can help address every-day problems in any subject area, not just science. This should give you a functional knowledge of what biology is about and how scientists work. In this respect, the laboratory component of our course is invaluable, and too important to be missed! We will have an opportunity to ask questions and pursue truths in small group study. You will interact with fellow students, our teaching assistants, Stephanie, Julie, Cathy, Doug, and me. Laboratories will provide opportunities to try out new ideas, ask more questions, share knowledge, and to ponder marvelous things about the living world we live, breathe, function, and reproduce in; where we conduct life.

This is meant to be an exciting and rewarding learning experience. We hope you gain insights into and an understanding of our living world such that you develop a working knowledge about science in general with an emphasis placed on biological phenomenon. Our attempt is to educate, to produce informed, questioning, critical thinking, and discerning citizens. Your charge is to become tactfully critical, compassionate, open to and understanding of new and/or revolutionizing concepts. Go for it! We’re glad you’ve decided to embark upon this journey with us. Help us guide your learning about life as we trek down provocative "garden paths" together.

**Grading Policy:**

Your grade will be performance and point-based. This is not “our” grade. It is “yours” and is earned with significant effort; albeit, each one of us has the right to fail. Included are readings (see Syllabus under Lecture Schedule), lecture exams, lab. quizzes (see Syllabus under Laboratory Schedule), and a few, but fun laboratory homework assignments and readings.

There will be four one hour, in-class exams. A non-comprehensive final exam will constitute Exam 4. Each exam will consist of Matching, Multiple Choice, True-False, Short answer/fill-in-the-blank, Short answer essay, and Contemplative and/or synthesizing essay questions. A “detailed review sheet” for each exam will be provided one week prior to that exam. Exams will “test” your ability to recognize correct responses, recall ideas and terminology, discuss knowledge of concepts, synthesize new relationships between existing concepts, and to solve problems using your new-found knowledge. Quizzes (10) will be given during all but a few laboratory sessions. They are given during the first 10 mins. of each lab. So, be on time as there are NO lab quiz makeups unless you have made prior arrangements with your Lab. TA. Quizzes will focus on questions that arise solely from the lab manual readings, lab preparation, and from the most recent lab. just completed. HOMEWORK will vary in type and complexity to fulfill the laboratory experience. For example, you will be asked to:

1) prepare written laboratory assignments,
2) collect data outside of lab (at home) for use in the lab,
3) read and report on readings in lab., and
4) prepare and give oral presentations.
TEXT & GUIDE:

Our required text is BIOLOGY: The Unity and Diversity of Life, 8th Edition, by C. Starr and R. Taggart, published by Wadsworth Publishing Co. The bookstore will also provide USED COPIES as well as the Study Guide and Workbook with the textbook that also contains a valuable CD ROM. It is highly recommended that you purchase, read, and study these two documents. Your academic success in this class, in addition to your presence at lectures and laboratories, will depend on it. We reserve the right to extract questions directly from the Student Study Guide & Workbook for use in our four lecture exams!

We have also placed a copy of the text and the ancillary on Library Reserve for those of you who need access to a copy while studying on campus. Your TA's also have copies of the text, Student Study Guide, etc. Chapter note sets used in lecture are also handed out, but on reserve in our Biology 103 Notebooks for your perusal. Please, DO NOT REMOVE any of these help aides from the library, at the risk of being severely ridiculed by your fellow students, who also want the advantage of using these guides for their success.

OFFICE HOURS:

We will determine the best time and place to meet with you in addition to lecture and laboratory sessions. We shall also establish times to meet with you for EXAM REVIEWS, directed by your TA's, before each exam. You will also be encouraged to set up individual appointments with your TA or me, whenever you feel that individual attention is needed. Please utilize us. We know more about this course than anyone else because we have been actively involved in its development, set-up, and now in its teaching. We are here to help you succeed!

MISSED CLASSES, LECTURES, & LABORATORIES:

If you are going to miss your regularly scheduled Lab, you need to check and clear it with your TA. All three lab sections are expected to begin the semester at full capacity, ca. 25 students each. DON'T miss laboratories or lectures! There is a strong correlation with lectures and laboratories missed with final grades! Hint, hint!

GRADE DETERMINATION SYNOPSIS:

LECTURE:

- Hour exams: 1-4, ca. 125 points each
- Final exam is NON-COMPREHENSIVE

LABORATORY:

- Lab. Evaluations (120), Oral Reports (30),
- Quizzes (130), Data Reports (50) ca.

EXTRA CREDIT: (optional)

- Literature-based paper or Research project

TOTAL COURSE POINTS

500

330

25

CA.

855

If you will miss an EXAM or LAB QUIZ, please contact us BEFORE either is administered. We will ONLY provide make-up quizzes and exams when the excuse is valid (documented, a debilitating illness, sport or university-related travel, etc.), and we have been notified in advance of the exam to be missed. Otherwise, you will forfeit the make-up of that quiz or exam. No exams may be made-up once graded and returned to you, generally one week.
You may receive up to 25 points of OPTIONAL extra credit by preparing a WRITTEN (Literature or Project) Research Paper (see Extra Credit Paper Outline, P. 15 in Lab. Manual) by using LIBRARY RESOURCES or PERFORMING a Research Project (see Lab. Research Project, Pp. 6-14 in Lab. Manual). The main thrust of this written paper/research project must be biological, but overtones in your major field are invited and encouraged (e.g. written research papers such as, “Legal implications of surrogate motherhood,” “An historical outline of the development of vaccines,” “Metamorphosis: A lesson plan for 5th grade science,” or perform a research project such as, “Truth in advertising: Air Water,” “Paramecia Prefers Paramagnetic Precipitation,” “My cat and Me;” etc.). All extra credit projects should be approved IN ADVANCE. We’ll help you get started. Maximum point value is 25 for both types. Due date: week of May 7-10. Final grades will be based on ca. 855 total COURSE points and determined by percentages below:

A = 90 - 100%
B = 80 - 89%
C = 70 - 79%
D = 65 - 69%
F = 0 - 64%

Regular attendance is expected. Obviously, we cannot chain you to a desk. Nor do we want to! Any student desiring a passing grade in our class must make a reasonable effort (regular attendance, participation in lab. and projects, completion of assignments, etc.). If a “reasonable effort” is not realized in lab, a student will receive a lower grade than might be expected, regardless of grades achieved in Lecture (lecture exams), as points are “weighted”, ca. 40% for Lab. and 60% for Lecture. We will adhere to the UAF guidelines for issuance of “Incomplete” grades and administering “honor codes.” If you neglect your lab, you significant risk of failing this course. It is designed to fulfill a science lab. core curriculum graduation requirement.

Important Dates To Remember:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Chs.</th>
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<tbody>
<tr>
<td>Feb. 07</td>
<td>Exam 1</td>
<td>1-3, 46-50</td>
</tr>
<tr>
<td>Mar. 07</td>
<td>Exam 2</td>
<td>4-6, 9-19</td>
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<tr>
<td>Mar. 11-18</td>
<td>Spring Break</td>
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<td>Apr. 04</td>
<td>Exam 3</td>
<td>22-27, 29-34</td>
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<td>Apr. 09</td>
<td>Extra Credit Written/Research Idea DUE!</td>
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<td>Apr. 17</td>
<td>Body Temperature Data DUE in Lab!</td>
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<td>Apr. 18</td>
<td>Term Project PROGRESS Report DUE in Lab!</td>
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<tr>
<td>May 02</td>
<td>Exam 4</td>
<td>7-8, 35-45</td>
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<tr>
<td>May 07-10</td>
<td>Extra Credit Written Papers or Research Projects DUE!</td>
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</tbody>
</table>
### Biology F103X

**Lecture Schedule**

**M & W 5:15 to 6:45 P.M.; Schaible Aud.**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic of Discussion</th>
<th>Text Reading</th>
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<tbody>
<tr>
<td>JAN.</td>
<td>M 15</td>
<td><em>AK Civil Rights Day (ACRD) no day classes</em></td>
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<td></td>
<td>Th 18</td>
<td><em>First day of instruction &amp; late registration begins</em></td>
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<td></td>
<td>M 22</td>
<td>Introduction to our Course: Handouts (HO)</td>
<td></td>
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<tr>
<td>T 23</td>
<td>Lab. 1: Introduction to the Laboratory</td>
<td>Ch. 1</td>
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<td></td>
<td>T 30</td>
<td>Lab. 2: The Scientific Method</td>
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<td></td>
<td>W 24</td>
<td>Concepts in Science</td>
<td>Ch. 1</td>
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<tr>
<td>F 26</td>
<td><em>Last Day to Register, Add Classes, pay fees or get 100% tuition &amp; material fees returned</em></td>
<td></td>
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<tr>
<td>M 29</td>
<td>Biological Chemistry &amp; Carbon</td>
<td>Chs. 2,3</td>
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<tr>
<td>T 30</td>
<td>Populations, Communities, Ecosystems, Biosphere</td>
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<tr>
<td>F 02</td>
<td><em>Last day for Student &amp; Faculty initiated withdraws &amp; 50% tuition refund</em></td>
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<tr>
<td>M 05</td>
<td>Cell &amp; Membrane Structure &amp; Function</td>
<td>Chs. 4, 5</td>
<td></td>
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<tr>
<td>T 06</td>
<td>Lab. 3: Movement In and Out of Cells</td>
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<tr>
<td>W 07</td>
<td><em>EXAM 1: (9 Chpts.)</em></td>
<td>Chs. 1-3, 46-50</td>
<td></td>
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<tr>
<td>M 12</td>
<td>Cell Structure &amp; Function, &amp; Metabolism</td>
<td>Chs. 4, 5, 6</td>
<td></td>
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<tr>
<td>T 13</td>
<td><em>Exam 1 Return</em></td>
<td></td>
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<tr>
<td>W 14</td>
<td>Lab. 4: Cell Reproduction</td>
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<tr>
<td>Th 15</td>
<td><em>Last day to apply for SPRING graduation</em></td>
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<tr>
<td>M 19</td>
<td>Inheritance, Chromosome Variation, &amp; Human Genetics, DNA</td>
<td>Chs. 11, 12, 13</td>
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<tr>
<td>T 20</td>
<td>Lab. 5: Genetics: Plants</td>
<td></td>
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<tr>
<td>W 21</td>
<td>Protein Syntheses, Gene Expression, Recombinant DNA &amp; Genetic Engineering</td>
<td>Chs. 14, 15, 16</td>
<td></td>
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<tr>
<td>F 23</td>
<td><em>Low Grade Rpts. For Freshman DUE</em></td>
<td></td>
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<tr>
<td>M 26</td>
<td>Evolution, Microevolution, Speciation</td>
<td>Chs. 17, 18, 19</td>
<td></td>
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<tr>
<td>T 27</td>
<td>Lab. 6: Genetics: Human</td>
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<td>W 28</td>
<td>Macroevolutionary Trends &amp; Origins, Evolution</td>
<td>Chs. 20, 21</td>
<td></td>
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<tr>
<td>MAR.</td>
<td>M 05</td>
<td>Viruses, Bacteria, Protists, Fungi</td>
<td>Chs. 22, 23, 24</td>
</tr>
</tbody>
</table>
Exam 2 TA Review w/HO!

T  06  Lab. 7: Organismal Interactions
      Trees, Bugs & Microbes
Exam 2 TA Review w/HO!

W  07  EXAM 2 (14 Chpts.)  Chs. 4-6, 9-19

M  10-18 SPRING BREAK

M  19  Plants, Tissues, Nutrition and Transport
      Exam 2 Return
      Chs. 25, 29, 30

T  20  Lab. 8: Plant Structure and Function
      Roots, stems, & Leaves

W  21  Plant Reproduction, Growth & Development
      Chs. 31, 32

F  23  Last day for student/faculty initiated withdraws (w/W)

M  26  Animals, (Invertebrates & Vertebrates)
      Chs. 26, 27

T  27  Lab. 9: Plant Structure and Function
      Flowers, Fruits, & Seeds

W  28  Tissues, Organ Systems, Homeostasis
      Information Flow and the Neuron
      Chs. 33, 34

APR. M  02  Integration & Control, Sensory & Endocrine
        Systems
        Exam 3 TA Review w/HO!

T  03  Lab. 10: Animal Kingdom
      Animal Phyla, Classes, & Orders
      Exam 3 TA Review w/HO!

W  04  EXAM 3 (11 Chpts.)  Chs. 22-27, 29-34

M  09  Fall semester 2001 registration and fee payment begin
      Protection, Support & Movement
      Extra Credit Written/Research Idea DUE!
      Exam 3 return

T  10  Lab. 11: Animal Structure
      Fetal Pig Dissection

W  11  Digestion and Human Nutrition; Energy
      Pathways for Acquisition & Release
      Chs. 42, 7, 8

M  16  Circulation
      Ch. 39

T  17  Lab. 12: Human Senses
      Body Temperature Data DUE in Lab!

W  18  Immunity and Respiration
      Term Project PROGRESS Report DUE in Lab!
      Chs. 40, 41

M  23  Water, Balance & Temperature Control
      Ch. 43

T  24  Lab. 13: Human Reproduction

W  25  Principles of Reproduction & Development
      Ch. 44

F  27  All Campus Day (No classes)

M  30  Human Reproduction & Development
      Exam 4 TA Review w/HO!
      Ch 45

MAY T  01  Lab. 14: Ethics in Science
      Exam 4 TA Review w/HO!

W  02  EXAM 4, FINAL (13 Chpts.)  Chs. 7-8, 35-45
<table>
<thead>
<tr>
<th>Lab. #</th>
<th>TUES.</th>
<th>TOPIC</th>
<th>YOUR ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jan. 23</td>
<td><strong>Introduction to the Laboratory:</strong> Lab Safety (Our Responsibility)</td>
<td>Know parts!</td>
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<tr>
<td></td>
<td></td>
<td>Tools of Science: The Microscope</td>
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<tr>
<td>2.</td>
<td>Jan. 30</td>
<td><strong>The Scientific Method:</strong> Animal Behavior</td>
<td>Quiz 1</td>
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<tr>
<td>3.</td>
<td>Feb. 06</td>
<td><strong>Movement In and Out of Cells:</strong> Osmosis &amp; Diffusion</td>
<td>Quiz 2</td>
</tr>
<tr>
<td>4.</td>
<td>Feb. 13</td>
<td><strong>Cell Reproduction:</strong> Mitosis &amp; Meiosis</td>
<td>Quiz 3</td>
</tr>
<tr>
<td>5.</td>
<td>Feb. 20</td>
<td><strong>Genetics: Plants</strong> Mono- &amp; Di-hybrid Crosses</td>
<td>Quiz 4</td>
</tr>
<tr>
<td>6.</td>
<td>Feb. 27</td>
<td><strong>Genetics: Human</strong> Dominance and Recessives</td>
<td>Quiz 5</td>
</tr>
<tr>
<td>7.</td>
<td>Mar. 06</td>
<td><strong>Organismal Interactions:</strong> Trees, Bugs &amp; Microbes</td>
<td>Quiz 6</td>
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<td></td>
<td>Mar. 10-18</td>
<td><strong>SPRING BREAK:</strong> Have a super break!</td>
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<tr>
<td>8.</td>
<td>Mar. 20</td>
<td><strong>Plant Structure and Function:</strong> Roots, Stems, &amp; Leaves</td>
<td>Quiz 7</td>
</tr>
<tr>
<td>9.</td>
<td>Mar. 27</td>
<td><strong>Plants Structure and Function:</strong> Flowers, Fruits, &amp; Seeds</td>
<td>Quiz 8</td>
</tr>
<tr>
<td>10.</td>
<td>Apr. 03</td>
<td><strong>Animal Kingdom:</strong> Phyla, Classes, &amp; Orders</td>
<td>Quiz 9</td>
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<tr>
<td></td>
<td></td>
<td>Thermometer distribution for Lab. 12</td>
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<tr>
<td>11.</td>
<td>Apr. 10</td>
<td><strong>Animal Structure:</strong> Fetal Pig Dissection</td>
<td>Quiz 10</td>
</tr>
<tr>
<td>12.</td>
<td>Apr. 17</td>
<td><strong>Human Senses</strong> Body Temperature Data DUE!</td>
<td>Quiz 11</td>
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<tr>
<td>14.</td>
<td>May. 01</td>
<td><strong>Ethics in Science</strong> Pro/Con Topical Panels</td>
<td>Quiz 13</td>
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</tbody>
</table>