Biology 402 – Cell Biology  
Dr. Robert J. Wiggers, Dept. Biology

Class Notes: Posted on D2L
Class Time & Place: MWF 9 – 9:50 am, Miller Science, room 323
Office: Room 204 Miller Science Bldg
Office phone: 468-2147 / rwiggers@sfasu.edu
Office hours: M: 1 – 3; T: 10 – 11; W: 1 – 3; F: 10 – 11; by appointment

Course Description: Three semester hours, three hours lecture per week. Structure and function of eukaryotic cells. Topics include architecture of the cell and function of cellular components, the cytoskeleton, interactions between the cell and the extra-cellular matrix, regulation of cell growth, differentiation, and division, and mechanisms of cellular transport.

Pre-requisites: Bio 341
Co-requisites: None

Program Learning Outcomes: PLO #1

Student Learning Outcomes:

- Understand the biochemical principles by cells maintain homeostasis.
- Be able to describe, in terms of structure and function, intra-cellular components.
- Be able to describe, both qualitatively and quantitatively, cellular processes that both produce and consume energy, including transport, glycolysis, the TCA cycle, the electron transport system, photosynthesis, and chemotrophy.
- Be able to describe the mechanisms by which cells communicate both intra- and inter-cellularly.
- Be able to describe the cell cycle and the critical control points utilized by cells to control both growth and apoptosis.

Course Calendar – tentative (subject to change)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>TEXT CHAPTERS&lt;sup&gt;2&lt;/sup&gt;</th>
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<tbody>
<tr>
<td><strong>Cellular Function &amp; Structure (~40% of course)</strong></td>
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<tr>
<td>Bioenergetics</td>
<td>3</td>
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<td>Protein Structure &amp; Function</td>
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<td>Biomembranes</td>
<td>11</td>
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<td>Membrane Transport</td>
<td>12</td>
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<td>The Cytoskeleton</td>
<td>17</td>
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<td><strong>Transport, communication, &amp; integration (~20%)</strong></td>
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<tr>
<td>Intracellular compartments &amp; trafficking</td>
<td>15</td>
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<td>Principles of cellular communication</td>
<td>16</td>
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<tr>
<td>Cell communities – tissues</td>
<td>20</td>
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<td><strong>Metabolism (~27%)</strong></td>
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<td>Glycolysis &amp; the TCA cycle</td>
<td>13 &amp; 14</td>
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<tr>
<td>Oxidative phosphorylation &amp; Photosynthesis</td>
<td>14</td>
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<td><strong>The Cell Cycle (~13%)</strong></td>
<td>18</td>
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<sup>1</sup> This list of topics and order of discussion is subject to change.
<sup>2</sup> Supplemental readings will occasionally assigned – you are responsible for all info in these supplemental readings.
Exams: (4) 100 point exams will be given during the semester; TENTATIVE dates are:

- September 21
- October 17
- November 12
- December 10 (Monday @ 8 am; 2 hour time slot)

The last exam, although given during the regularly scheduled “Final Exam” time slot IS NOT CUMULATIVE – it will simply cover lecture material discussed between the third exam and the end of the semester. The exams will have some questions that are strictly objective in nature – matching, fill-in-the-blank, T/F, etc. – but most of the questions will involve critical thinking / problem solving skills. In order to do well, you will have to be able to use the knowledge gained from lecture, the text, and any assigned outside readings, to solve problems, interpret data, and answer questions dealing with cellular physiology and processes.

Make-up exams will only be allowed in the case of a University approved absence (illness with a Doctor's note, a family crisis with verification from another family member, or a religious holiday). YOU MUST NOTIFY ME WITHIN 24 HOURS OF A MISSED EXAM TO BE ELIGIBLE FOR A MAKE UP EXAM. If you will miss an exam due to a University sponsored outing, you must notify me before the exam date. All make-up exams will be arranged at the instructors earliest convenience. As per University policy (see policy A-10: Class attendance and excused absences), if you miss three weeks of class (9 days), you will NOT BE ALLOWED TO MAKE UP ANY SUBSEQUENTLY MISSED WORK, EVEN IF THAT PARTICULAR ABSENCE IS EXCUSED.

Your grade in Bio 402 / 501 will be determined by how many points, out of 400, you receive:

- 360 – 400 points = “A”
- 320 – 359 points = “B”
- 280 – 319 points = “C”
- 240 – 279 points = “D”
- 000 – 239 points = “F”

Attendance

Roll will be taken every day. Although attendance is not required, it is expected. Excessive absences may result in an inability to make up missed work (see above)

E-mail & phone policy

I will be periodically communicating with you via e-mail. I use your student accounts & addresses for this purpose. It is your responsibility to check your e-mail regularly and, if you have your student account forwarded to some secondary account, to be certain that this is not full and can receive any messages (see policy F-41: E-mail for university communication). Due to security and privacy issues, I will not discuss via e-mail any issue regarding class performance (grades, attendance, questions about your exam answers, etc.). I check my e-mail once a day – between 8 & 8:30 when I arrive. I will answer e-mail queries, if appropriate (I have over 200 students and simply can’t answer all e-mail queries), during the next scheduled office hours block. I do not check e-mail in the evening or on weekends. If you wish to speak with me over the phone, call during office hours as I do not return phone calls; departmental policy prohibits returning calls if a long distance number is involved, so, to keep it simple, no phone calls will be returned.
Academic Integrity (policy 4.1)

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy here.

Withheld Grades (policy 5.5)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. You may read the complete policy here.

Students with Disabilities

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to Disabilities Services webpage.

Acceptable Student Behavior (Student Conduct Code, policy 10.4)

Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed. You may read the student code of conduct here.