Biology 4351 – Cell Biology
Dr. Robert J. Wiggers, Dept. Biology

Class Notes: Posted on D2L
Norton Smartworks: required
Class Time & Place: MWF 9 – 9:50 am, Via Live ZOOM
Office: Room 204 Miller Science Bldg
Office phone: 468-2147 / rwiggers@sfasu.edu
Office hours: Office hours: MWF 10 – 12 via ZOOM; T 9 – 12; by appointment (all office hours accessible via ZOOM)

Course Description: Three semester hours, three hours lecture per week. Structure and function of, primarily, 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 353
Co-requisites: None

Program Learning Outcomes: PLO #1, #3 (BS Biology)

Student Learning Outcomes:

- SLO – 1: Describe sub-cellular structures and how they contribute to normal cell physiology.
- SLO – 2: Explain cellular processes and mechanisms that contribute to normal cell physiology.
- SLO – 3: Be able to quantify energy changes mediated during cellular processes.

*******SFA Required Statement*******

COVID-19 MASK POLICY. Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.

## Course Calendar – tentative (subject to change)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>TEXT CHAPTERS²</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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<tr>
<td>Protein Structure &amp; Function</td>
<td>4</td>
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<tr>
<td>Biomembranes</td>
<td>11</td>
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<tr>
<td>Membrane Transport</td>
<td>12</td>
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<tr>
<td>The Cytoskeleton</td>
<td>17</td>
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<tr>
<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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<tr>
<td>Principles of cellular communication</td>
<td>16</td>
</tr>
<tr>
<td>Cell communities – tissues</td>
<td>20</td>
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<tr>
<td><strong>Metabolism (~27%)</strong></td>
<td></td>
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<tr>
<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>
</tr>
<tr>
<td><strong>The Cell Cycle (~13%)</strong></td>
<td>18</td>
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¹ This list of topics and order of discussion is subject to change.
² Supplemental readings will occasionally assigned – you are responsible for all info in these supplemental readings.

### Grading

Four 100 point exams will be given during the semester; TENTATIVE exam dates are:

- September 18
- October 16
- November 11
- December 7 (scheduled final time slot @ 8 – 10:30 am)

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. Each exam will be worth 100 points. Your score on the (4) exams will be averaged to give an “Exam Average”. All exams will be administered via D2L. Exams will open at 9 am on the scheduled day and remain open until 3 pm, thus you have a 6 hour block in which to take the exam. Once you begin the exam, you will have 75 minutes to complete it. The final will open at 8 am and remain open until 2 pm, again, once you start the exam you will have 75 minutes to complete it.
Homework

The publisher of this text book has a web based set of homework assignments to accompany each chapter. They can be accessed from D2L: Look in the “Norton” content module for a WW Norton Homework link. Each lecture topic (With the exception of The Importance of Water) and book chapter will have a homework assignment. Due dates will be specified on the Norton web site – generally, all homework assignments to be covered on an exam must be completed BY 10 pm THE DAY BEFORE THE EXAM. Each homework assignment is equally weighted and your grade on each will be averaged to give a “Homework Average”.

Your Final Grade for BIO 4351 will be determined using the following formula:

\[(0.35)(\text{Homework Average}) + (0.65)(\text{Exam Average}) = \text{Total Point Score}\]

The breakdown below shows you the relationship between “Total Point Score” and letter grades:

- Total Point Score = 90 – 100; (A)
- Total Point Score = 80 – 89; (B)
- Total Point Score = 70 – 79; (C)
- Total Point Score = 60 – 69; (D)
- Total Point Score <60; (F)

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 instructor’s earliest convenience.

Attendance

Although attendance is not required, it is expected.

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 (the relevant University policy can be read here).

Academic Integrity

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.

The University’s definitions of academic dishonesty as well as penalties for violations can be found in the larger Student Code Of Conduct.

FA 2020
Bio 4353, Wiggers
Withheld Grades

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 http://www.sfasu.edu/disabilityservices/.

Acceptable Student Behavior

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. 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.