

<b>COURSE TITLE BLACKBOARD SITE</b>	BIO 6173 Cells and Organisms Fall 2012 – <a href="http://my.ltu.edu">http://my.ltu.edu</a> and select CRN 1922
<b>INSTRUCTOR</b>	Tamara L Tucker, Ph.D. Adjunct Faculty, Natural Sciences Department Contact information E-mail: <a href="mailto:ttucker@ltu.edu">ttucker@ltu.edu</a> , Cell Phone: 313 530 5117 Office hours by appointment
<b>SCHEDULE</b>	September 11 – December 11, 2012  Refer to <a href="http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp">http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp</a> for the last date to withdraw and other important registration related information.
<b>LEVEL/HOURS PREREQUISITE</b>	Graduate / 3 credit hours No prerequisites
<b>REQUIRED TEXT</b>  (See Blackboard for additional resources)	The Living World, 7 <sup>th</sup> edition, G.B. Johnson, Mcgraw Hill, ISBN 978-007-786435-4  Available for online purchase through LTU Bookstore at: <a href="http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489">http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489</a> .
<b>ADDITIONAL RESOURCES</b>	LTU Online student resources: <a href="http://www.ltu.edu/ltuonline/">http://www.ltu.edu/ltuonline/</a>
<b>TECHNICAL SUPPORT</b>	Technical support for using Blackboard is provided by the Helpdesk, 248.204.2330 or <a href="mailto:helpdesk@ltu.edu">helpdesk@ltu.edu</a> . Send the Help Desk a form detailing any issues by clicking here <a href="http://tinyurl.com/3yqrvne">http://tinyurl.com/3yqrvne</a> .

### COURSE SCHEDULE FOR MET/MSE SEMESTER COURSES

This fully online course begins with a partial week online course orientation period to familiarize yourself with the online learning environment and to meet online or via the phone with your instructor. Each subsequent week starts on a Monday and ends on a Sunday.

Dates	Modules	Topics / Readings	Assignments Due
Prior to Semester Start and Sep 11 – Sep 16	Module 0	Online Learning Orientation Course and Instructor Introduction Syllabus and Course Overview	Online Learning Orientation Discussion Board: A and B
Week of Sep 17 – Sep 23	Module 1: Biology Basics	Chapter 1 all sections	Discussion Board: A and B <b>Virtual Lab Activity:</b> Dependent and Independent Variables
Week of Sep 24 – Sep 30	Module 2: Chemistry, Physics, and Macromolecules	Chapter 2 sect. 2.1-2.3, and 2.5 Chapter 5 sect. 5.1, 5.3, and 5.6 Chapter 3 all sections	Discussion Board: A and B <b>LAB ACTIVITY:</b> Testing for Macromolecules and Enzyme Activity Self Assessment/ Journal
Week of Oct 1 – Oct 7	Module 3: Cell Physiology and the functions of membranes	Chapter 4 – all sections	Discussion Board: A and B <b>LAB ACTIVITY:</b> Cell Diffusion Quiz - Chapter 4 Post Test
Week of Oct 8 – Oct 14	Module 4: Cellular metabolism	Chapter 6 all sections Chapter 7 all sections	Discussion Board: A Self Assessment/Journal
Week of Oct 15 – Oct 21	Module 5: Cell Growth and Division (Mitosis)	Chapter 8 all sections	Discussion Board: A <b>Virtual Lab Activity:</b> The Cell Cycle and Cancer Quiz- Chapter 8 Post Test
Week of Oct 22 – Oct 28	Module 6: Cellular Biotechnology	Chapter 13 sect. 13.6-13.9	Discussion Board: A and B <b>LAB ACTIVITY:</b> Microarray Simulation Self Assessment/Journal
Week of Oct 29 – Nov 4	Module 7: The animal body MIDTERM	Chapter 22 sect. 22.1-22.4	Discussion Board: A Midterm Evaluation <b>MIDTERM</b>
Week of Nov 5 – Nov 11	Module 8: Circulation and Respiration	Chapter 23 sect. 23.2-23.4 and 23.7 Chapter 24 sect. 24.4 and 24.5	Discussion Board: A and B <b>Virtual Lab Activity:</b> Blood Pressure Self Assessment/Journal

Dates	Modules	Topics / Readings	Assignments Due
Week of Nov 12 – Nov 18	Module 9: Digestion and Osmoregulation	Chapter 25 all sections Chapter 26	Discussion Board: A <b>LAB ACTIVITY:</b> Kidney Filtration Models Quiz- Chapter 25 Post Test
Week of Nov 19 – Nov 25	Module 10: The Immune System	Chapter 27 <b>Light Week – Thanksgiving Break</b>	Discussion Board: A Self Assessment/Journal
Week of Nov 26 – Dec 2	Module 11: Movement and the Nervous System	Chapter 22 sect. 22.5-22.8 Chapter 28	Discussion Board: A and B <b>LAB ACTIVITY:</b> Muscle and Bone Investigation (Dissection) Quiz – Chapter 28 Post Test
Week of Dec 3 – Dec 9	Module 12: Endocrine System and Human Reproduction	Chapter 30 Chapter 31	Discussion Board: A and B <b>Inquiry Project Presentations</b> Self Assessment/Journal
Week of Dec 10 – Dec 11	Module 13:	Course Summary End of Course	Discussion Board: A <b>Inquiry Project Peer Evaluations</b> Final Evaluation Final Exam

### EDUCATIONAL GOALS

**Course description:** This course will to give students an understanding of the general structure and functions of cells as they relate to the function of tissue, organs, and organisms. Topics covered will include cell structure, cell growth and reproduction (mitosis), and cellular metabolism. We will also discuss recent advances in cellular biotechnology and explore the implications of this work on human health and the field of biology. We will explore the physiology of the major organ systems of the animal body and their contribution to the form and function of the organism.

Students will develop the ability to apply contemporary teaching methods and will utilize written and oral modes of communication to relate knowledge about biological principles and concepts. Topics will be explored via hands-on lab activities, written and oral presentations, experimental design projects, interactive discussions, journaling, a midterm, and a non-cumulative final exam. This course design is based on the 5 E's of the constructivist approach to teaching: Engagement, Exploration, Explanation, Elaboration, and Evaluation.

### STUDENT LEARNING OBJECTIVES

#### **Course Objectives:**

In this course students will;

- Develop a basic understanding of the physiology and functions of cells related to their role in forming tissues, organs, and organisms.
- Explore the applications and implications of cellular biotechnology as it relates to human health and our understanding of biology
- Explore the physiology and functions of the major organ systems and their significance as it relates to the form and function of a whole organism.

- Demonstrate the ability to apply contemporary methods for teaching biological concepts.
- Effectively utilize written and oral modes of communication to relate biological principles and concepts.

These objectives will be evaluated through assignments, quizzes, examinations, and other methods throughout the course.

### STUDENT EVALUATION

The course has assignments, exams, and participation points totaling 1000 points. Letter grades are awarded based on the total number of points achieved. Points may be deducted for late assignments.

Assignments	Points
<b>Online Participation Module 0-13 (10 pts/wk) Including:</b>	140
Participating in Bb discussion board forums	--
Viewing online lecture material	--
Completing practice assignments/exercises	--
<b>Quizzes (4x20pts)</b>	80
<b>Self Assessments/ Journal (6x15pts)</b>	90
<b>Virtual Lab Activities (3x15pts)</b>	45
<b>Lab Activities / Reports (5x25pts)</b>	125
<b>Inquiry Project and Peer Evaluation</b>	120
<b>Midterm and Final Exam (2x200pts)</b>	400
Total Points	1000

Class Points	Letter Grade
96 and above	A
90 – 95	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
61 – 70	D (Undergrad Only)
60 and below	E

*Note: Grades lower than a "B" fall below the LTU graduate standard*

### INSTRUCTIONAL METHODS AND COURSE ORGANIZATION

**Blackboard Learning Environment** – Blackboard at my.ltu.edu contains the syllabus, all assignments, reading materials, streaming videos, narrated PowerPoint mini-lectures, podcasts, written lecture notes, chapter quizzes, links to Web resources, and discussion forums. You will submit all assignments via Blackboard, and are expected to participate regularly in discussion topics. Please take time to familiarize yourself with the organization of the Blackboard site. You will want to check the site frequently for announcements reminding you of new resources and upcoming assignments.

**Student/Instructor Conversations** – Students are encouraged to keep in touch with the instructor via e-mail messages and by phone. Communication between students will occur primarily through the Bb discussion board.

**Self-Assessments and Journals** – Self-assessment tools will help students measure their skills and progress during the course. Self assessment will be done along with journal entries. Journal entries will be an opportunity for you to answer questions and reflect on the material covered during the modules. A sample of the journal format is shown under the “Self Assessment/ Journal” tool tab. Self Assessments and Journal entries will be completed during all even numbered module weeks and will be due on the last day of the module.

**Required Reading** – Textbook chapters should be read according to the schedule outlined in the syllabus. Lectures for the material from each chapter will be posted online. The lectures will primarily highlight the key points of each chapter and may not include all information from the readings. While the exams will typically focus on these “key points” all material from the chapter (for assigned sections) is fair game to appear on exams whether it was specifically mentioned in a lecture or not.

**Publisher Web Site** – The publisher web site at [www.mhhe.com/tlw7](http://www.mhhe.com/tlw7) includes student materials, such as, case studies, animations, Powerpoints of images/figures, answers to the end of the chapter questions, and pre and post-tests. You should make use of as many of these resources as you need to be successful. You should also have access to the Connect website once you establish a user account and register the code from your textbook. Further information on the usage of the Connect site and LearnSmart will be forthcoming based on student need/interest.

(Please note: If you decided not to purchase a new book using the ISBN listed in the syllabus you may not have access to Connect and/or LearnSmart. Talk with you instructor if you would like to explore other options for getting access).

## **CLASS POLICIES AND EXPECTATIONS**

*I plan to offer you a valuable learning experience, and expect us to work together to achieve this goal. Here are some general expectations regarding this course:*

Each student has a LTU email account. If you wish to use a different email address for this course, please **change your email address in Blackboard under “Blackboard Tools”, then “Personal Information”** and send an email to me to store your email address in my email directory.

Readings, discussion forum participation, and written assignments must be completed according to the class schedule. It is important to contact the instructor as needed to discuss personal needs regarding course requirements and assignments.

It is essential that all students actively contribute to the course objectives through their experiences and working knowledge. Each student is expected to actively participate in online activities. These activities include completing online quizzes, self assessments and journal entries, and actively participating in Blackboard discussion forums, responding to questions posted by the instructor, and interacting positively with other students.

All assignments must be submitted on schedule, via Blackboard, and using Microsoft Office compatible software. If you need to submit an assignment via email, contact the instructor in advance.

Assignments must be completed to an adequate standard to obtain a passing grade. Requirements for each assignment are detailed in this syllabus.

Be prepared to log into Blackboard at least once each day. Please focus your online correspondence within the appropriate Blackboard discussion forums, so that your colleagues may learn from you.

At midterm and at the end of the course, you will be invited to participate in a University evaluation of this course. Your feedback is important to the University, to LTU Online, and to me as an instructor, and I strongly encourage your participation in the evaluation process.

It is important for you as students to know what to expect from me as your instructor:

- I will be available to you via e-mail and phone, and will promptly reply to your messages.
- I will be available to you for face-to-face appointments as requested.
- I will maintain the Blackboard web site with current materials, and will resolve any content-related problems promptly as they are reported to me.
- I will send out a weekly e-mail update to all class members to guide upcoming work and remind you of assignment due dates.
- I will return all assignments to you promptly, and will include individualized comments and suggestions with each assignment.
- I will hold our personal written or verbal communications in confidence. I will not post any of your assignments for viewing by the class without requesting your approval in advance.
- I will treat all members of the class fairly, and will do my best to accommodate individual learning styles and special needs.
- If any of these points need clarification, or should special circumstances arise that require my assistance, please contact me so that we may discuss and resolve the matter.

The LTU Academic Honor Code will be followed in this course. If you are caught cheating, plagiarizing, or not doing your own work you will receive a zero for that exam, quiz or homework. I am required to report all cases of academic dishonesty to the appropriate departmental chair or dean for further action. If a student is found guilty of a violation of the honor code he/she will receive an F in the course. A second offense results in expulsion from the University. Refer to the academic honor code for further information on the University's policies concerning academic dishonesty.

[http://www.ltu.edu/currentstudents/honor\\_code.asp](http://www.ltu.edu/currentstudents/honor_code.asp)

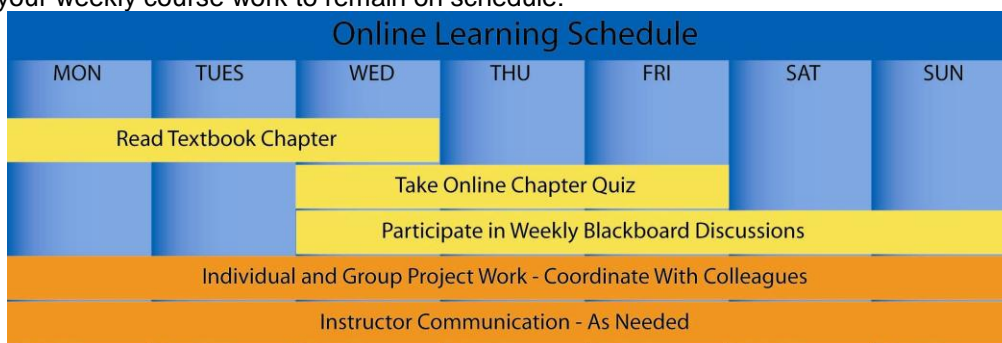
## **PRACTICAL GUIDELINES FOR CLASS LOAD EXPECTATIONS**

A three-credit course generally requires at least nine hours per week of time commitment. Here are some practical guidelines to help schedule your time commitments for this online course:

- A 14-week semester (the Summer semester is compressed into 10 weeks) would require at least 126 hours of time commitment to successfully complete all readings, activities, assignments, and texts as described in this syllabus.
- You should reserve at least 6 hours per week to read the required textbook chapters and resources, participate in online discussions, review presentation materials, and work through online quizzes. This effort will total at least 84 hours over the course of the semester.
- You should organize your remaining time to roughly correspond with the point value of each major assignment. This means that you should plan to spend at least:
  - 8-9 hours preparing your case study review;
  - 24-40 hours working with your group on the three parts of your semester-long project;

- 8-9 hours working on the various components of your reflective consolidation (final exam).

These guidelines may not reflect the actual amount of outside time that you – as a unique individual with your own learning style – will need to complete the course requirements. The number of hours each week will vary based on assignment due dates, so please plan ahead to insure that you schedule your academic, work, and personal time effectively. The following graphic may be used to guide you in planning your weekly course work to remain on schedule:



## ASSIGNMENT DETAILS

An overview of the course assignments and evaluation criteria are detailed below. Please review these requirements carefully.

Please note that you should not submit any assignments to the Blackboard “Digital Drop Box.” All assignments are submitted using the Blackboard “Assignments” or “SafeAssign” function. Some assignments are also posted to the Blackboard Discussion Forum for student comments.

### Assignments

**Online Participation:** For this course 10 points will be awarded for week for online participation. The specific activities that fall under this category include participating in the Bb discussion board forums, viewing lectures and materials posted online, and participation in practice assignments and exercises. Specific requirements for posting to a particular discussion will be stated at the beginning of the forum. In general discussion board participation will be graded based on the rubric below.

### PARTICIPATION RUBRIC MSE/ MET PROGRAMS

Percentage (%) *	Participation
90.0 – 100	<ul style="list-style-type: none"> <li>• The participant consistently posted insightful comments and questions that prompted on-topic discussion.</li> <li>• The participant consistently helped clarify or synthesize other group members' ideas.</li> <li>• If disagreeing with other students' ideas, the participant stated his or her disagreement or objections clearly, yet politely.</li> </ul>
80.0 -89.9	<ul style="list-style-type: none"> <li>• The participant was notably lacking in one or two of the items listed for A-level participation.</li> <li>• The participant consistently had to be prompted or coaxed to participate.</li> <li>• The participant usually, but not always, expressed herself or himself</li> </ul>



	clearly.
<b>70.0 – 79.9</b>	<ul style="list-style-type: none"> <li>• The participant was consistently lacking in two or more of the items listed for A-level participation.</li> <li>• The participant was extremely reluctant to participate, even when prompted.</li> <li>• The participant rarely expressed himself or herself clearly.</li> </ul>
<b>&lt; 69.9</b>	<ul style="list-style-type: none"> <li>• The participant frequently attempted (success is irrelevant) to draw the discussion off-topic</li> <li>• The participant was rude or abusive to other course participants.</li> <li>• The participant consistently failed or refused to participate at all, even when specifically prompted or questioned</li> </ul>

Adapted from the Northwestern University Academic Technology Services:

[http://www.edtech.neu.edu/blackboard/resources/managing/discussion\\_grading.htm](http://www.edtech.neu.edu/blackboard/resources/managing/discussion_grading.htm)

**Self Assessments and Journal Entries:** The format for the Self Assessments and Journal Entries will typically include 5 self assessment questions related to the activities in the module and will be worth 5 pts total. One to three questions related to the content covered in the module will also be included and will represent the reflective journal entry. These questions will typically require a short answer response (several sentences) or a brief essay response (one or two paragraphs) and will be worth a total of 10 points. These activities will be posted under the “Self Assessment / Journals” tab.

**Quizzes:** All quizzes will cover the material presented in a single chapter covered from the module and are produced by the textbook publisher. These quizzes are meant to test your knowledge of the content in that chapter. Each quiz includes 20 multiple-choice questions and will be worth 20 points. Quizzes will be posted under the “Assignments” tab and are listed as “Chapter X Post Tests”.

**Virtual Labs:** Each virtual lab activity can be found on the textbook website ([www.mhhe.com/tlw7](http://www.mhhe.com/tlw7)) and can be accessed through Blackboard under the “Textbook Resources” tab. It is advised to read the Instructions for each lab before beginning the Lab Exercise. Your assessment for each virtual lab will be based on your completion of the Post Lab Quiz and Report that is included for each lab. This document should be submitted digitally to your instructor upon completion. Each virtual lab will be worth 15 points.

**Lab Activities:** You will complete a total of four “wet” lab activities and one simulation during this course. You are expected to actually conduct each activity on your own, collect data, and complete a lab report to earn full points for each activity. In some cases you may need to submit evidence (pictures or video) to verify that the lab was completed (this will be specified for each particular lab) in addition to the lab report. The goal for this course was to present labs that reinforce concepts from the module while being easy to duplicate in a K-12 classroom setting. Hence, almost all labs include inexpensive materials and equipment that you can easily find at home. Each lab will include a reagent list that will allow you to prepare for each activity. If there is an ingredient or piece of equipment required that you do not have available your instructor will work with you to supply the item or devise an alternate plan for the activity. Each lab activity will be worth 25 points.

**Inquiry Project:** For your final lab exercise in this course you will develop and execute an inquiry based learning activity that includes a lesson and lab and that could be carried out in a K-12 classroom. A



detailed description of the project requirements and grading rubric are spelled out in the document “Inquiry Project Guidelines” under the “Assignments” tab in Blackboard.

## **SYLLABUS ADDENDA**

Please see the LTU Online “Current Students” web site <http://www.ltu.edu/ltuonline/> for comprehensive information about Lawrence Tech’s academic services, library services, student services, and academic integrity standards. The content of this web site is explicitly included in these syllabus requirements.

The LTU Online “Current Students” web site also includes grading rubrics used by your instructor to evaluate written assignments, discussion forum participation, and group assignments. Please note that the SafeAssign anti-plagiarism product will be used for written assignments submitted for this course. Please see the instructions included on the [eHelp web site](#) regarding the use of the SafeAssign product.

### **Undergraduates: Leadership Transcripts**

The leadership transcript enables students to track co-curricular activities that are undertaken above and beyond the requirements of the LTU curriculum. The leadership transcript serves students by enhancing the leadership portfolio; providing the opportunity for a transcript of distinction; enhancing their resumes; and assisting in articulating leadership experience. It can be accessed by logging on to Banner Web and clicking the Student and Financial Aid tab. Leadership Activities is located at the bottom of the list. More information is available at <http://www.ltu.edu/leadership>.