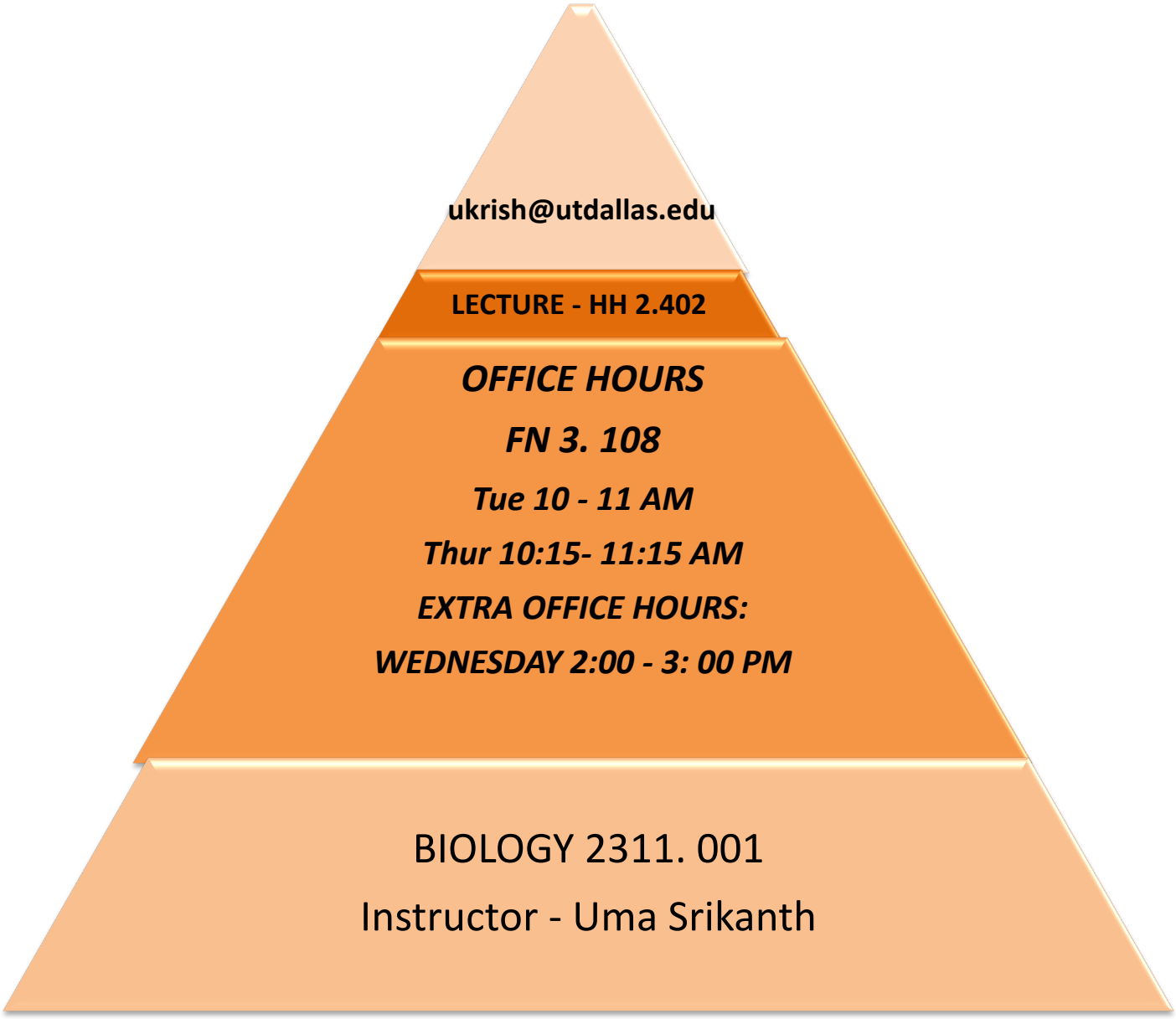
INTRODUCTION TO MODERN BIOLOGY CLASS – 2311.001 SPRING 2020



Course Description:

Biology 2311 – This course presents some of the basic concepts of modern Biology with an emphasis on the molecular and cellular basis of biological phenomena. Topics include metabolism of biological macromolecules, cell structure and function, cellular respiration, cell

division, cell cycle, cell signaling, classical and molecular genetics, and DNA replication, transcription, and translation. Some landmark experiments that will help provide an in depth understanding of the concepts will be discussed.

Student Learning Outcomes:

1. *Students will be able to define the subcellular structures, macromolecules in a eukaryotic cell*

2. Students are able to calculate amount of energy produced in reactions and also from the individual macromolecules that we consume as part of our diet.

3. Students will be able to explain and describe the basic functions of cells including energy production and utilization (in animal and plant cells), cell division, the basic mechanisms of genetic inheritance, structure of DNA, discovery of DNA, transcription and translation process, the regulation of gene expression, and selected aspects of the molecular basis of cancer.
4. Students will be able to understand basic signal transduction pathways and their final responses inside cells
5. Students will be able to develop hypotheses to interpret experimental observations and devise experiments to test these hypotheses.
6. Students will be assessed on applying concepts taught in lectures
7. Students participate in interactive discussions in lecture and in workshops (workshops are where we break our large class into smaller groups and encourage active learning)
8. Students learn to discuss concepts with fellow classmates in workshop and interact as a team in lecture sessions as well.

Textbook and online tool for the course:

Required: Biology by Russell, 4th edition and the online access tool, MindTap

There are several purchase options for the book and the online access tool as a bundle and/or separately

Please check prices at Cengage.com or at the UTD Bookstore

You may buy the Loose-Leaf Bundle, Hardback Bundle or the eBook Bundle:
Loose-Leaf Bundle

Russell/Hertz/Mcmillian - Bundle: Biology: The Dynamic Science, Loose-leaf Version, 4th + LMS Integrated for MindTap® Biology, 2 terms (12 months) Printed Access Card
9781337086929

Hardback Bundle
Bundle: Biology: The Dynamic Science + LMS Integrated for MindTap®, 2 terms (12 months) Printed Access Card
9781305934160

MindTap Access Code with eBook
Russell - LMS Integrated for MindTap® Biology, 2 terms (12 months) Printed Access Card for Russell/Hertz/Mcmillan's Biology: The Dynamic Science
9781305881921

WORKSHOPS:

Registration in BIOL 2311 requires registration in BIOL 2111 and vice versa. If you do decide to drop BIOL 2311, please be sure to drop the workshop as well. ***Workshops and office hours will begin the week of Jan 20, 2020***

Please be sure that you have registered in one of the following workshop sections if you are attending ***this section of Biology 2311.001***

WORKSHOP	TIME AND DAY	ROOM #	Undergraduate Teaching ASSISTANT
BIOL 2111-001	Tu 8:00 – 8:50AM	FO 3.616	REYHAN MEETHEEN
BIOL 2111-002	Th 8:00 – 8:50AM	FO 3.616	RESHMA SOUNDHARRAJAN
BIOL 2111-003	Mo 1:00 – 1:50 PM	FO 3.222	SHRUTI MAHALE
BIOL 2111-004	We 1:00 – 1:50PM	FO 3.222	ZUHAIR ZAIDI
BIOL 2111-005	Fr 1:00 – 1:50PM	FO 3.222	MUHAMMED SHARIFF
BIOL 2111-006	Th 8:00 – 8:50AM	SLC 2.302	SHRUTI NATARAJAN
BIOL 2111-007	Mo 3:00 – 3:50PM	FN 2.202	RUTA UTTARKAR
BIOL 2111-008	Fr 10:00 - 10:50AM	FO 3.616	MARIA KIESEWETTER

DREAM TEAM UNDERGRADUATE TAs:

Aamerah Haque

Aneesh Bahadur

Anagha Sanne

GRADUATE TEACHING ASSISTANTS:

Khayati Chandratre,

Jonathan Carey,and

Parinazsadat Alemi

TENTATIVE SYLLABUS:

Lectures are 75 minutes each. You need not bring your textbook to the lectures. Please note that attendance is highly recommended. Green highlights are assessments (A) due dates and yellow are Exams. Lectures have (L) next to the dates.

	Lecture (L) & Assignment (A) dates	***MindTap Pre-assessments (# in brackets refers to the number of assessments)***	***Lectures***	*Chapter #'s*	***MindTap Post-assessments/ Conceptual activity (# in brackets refers to the number of assessments)***	***Quizzes***
Week 1	*Jan 14(L)*	*none*	*Introduction and Chemical Building Blocks of Life*	*3*	*none*	
	Jan 16 (L)	*none*	*Chemical Building Blocks*	*3*		
	Jan 18 (A)	***Chapter 4 (2)***				
Week 2	*Jan 21 (L)*		*Cells*	*4*		
	Jan 23 (L)		*Cells*	*4*		
	Jan 25 (A)				***Chapter 3***	
	Jan 25 (A)	***Chapter 5***				
Week 3	*Jan 28 (L)*		*Membranes and Transport*	*5*		***QUIZ 1 (Chapter 3 and parts of 4)***
	Jan 30 (L)		*Membranes and Transport*	*5*		
	Feb 1 (A)				***Chapter 4 (2)***	
	Feb 1 (A)				***Chapter 5***	
	Feb 1 (A)	***Chapter 6***				

Week 4	*Feb 4 (L)*		*Energy*	*6*		***QUIZ 2 (parts of Chapter 4 and Chapter 5)***
	Feb 6	***EXAM 1***		***3, 4, and 5***		
	Feb 8 (A)	***Chapter 7 (2)***				
Week 5	*Feb 11 (L)*		*Cellular Respiration*	*7*		
	Feb 13 (L)		*Cellular Respiration*	*7*		
	Feb 15 (A)				***Chapter 6***	
	Feb 15(A)	***Chapter 9 (2)***				
Week 6	*Feb 18 (L)*		*Cellular Respiration*	*7*		
	Feb 20 (L)		*Cell - cell communication*	*9*		***QUIZ 3 (Chapter6 and parts of 7)***
	Feb 22 (A)				***Chapter 7 (2)***	
	Feb 22 (A)	***Chapter 10***				
Week 7	*Feb 25 (L)*		*Cell – cell communication*	*9*		
	Feb 27 (L)		*Mitosis*	*10*		***QUIZ 4 (Parts of 7 and parts of 9)***
	Feb 29 (A)				***Chapter 9***	
Week 8	*Mar 3 (L)*		*Mitosis*	*10*		
	Mar 5	***EXAM 2***		***Parts of 6,7,9, parts of 10***		
	Mar 7 (A)				***Chapter 10***	
	Mar 7 (A)	***Chapter 11***				
Week 9	*Mar 10 (L)*		*Meiosis*	*11*		
	Mar 12 (L)		*Meiosis*	*11*		
	Mar 14 (A)	***Chapter 12 (2)***				
	Mar 16 – 20	***SPRING BREAK***				
Week 10	*Mar 24 (L)*		*Mendelian Inheritance*	*12*		***QUIZ 5 (Chapters 10 and 11)***
	Mar 26 (L)		*Mendelian Inheritance*	*12*		
	Mar 28 (A)				***Chapter 11 and Chapter 12***	
	Mar 28 (A)	***Chapter 13 and Chapter 14 (2) Pre- assessment and Focus: Genetics, Sociology, and Breast Cancer***				

Week 11	*Mar 31 (L)*		*Genes, Chromosomes , and Human Genetics*	*13*		
	Apr 2 (L)		*DNA – The Genetic Material*	*14*		***QUIZ 6 (Chapter 12)***
Week 12	***April 7***	***EXAM 3***		***10, 11 and 12***		
	Apr 9 (L)		*DNA – Discovery*	*14*		
	Apr 11 (A)	***Chapter 15 - (2 Assignments)***				
Week 13	*Apr 14 (L)*		*DNA Replication*	*14*		
	Apr 16 (L)		*DNA REPAIR and From DNA to Protein*	*14 and 15*		***7 (parts of Chapter 14)***
	Apr 18 (A)				***Chapter 14 (2)***	
	Apr 18 (A)	***Chapter 16 (2)***				
Week 14	*Apr 21 (L)*		*FROM DNA to Protein*	*15*		
	Apr 23 (L)		*Regulation of Gene Expression*	*16*		
	Apr 25 (A)				***Chapter 15***	
	Apr 25 (A)	***Chapter 18***				
Week 16	*Apr 28 (L)*		*Regulation of Gene Expression*	*16*		***8 (Chapters 15 and parts of 16)***
	Apr 30 (L)		*DNA Technologies*	*18*		
	TBA	***EXAM IV***		***13, 14, 15, parts of 16, and 18***		

EXAM DATES:

EXAM 1	***Chapters 3,4,5,and parts of 6***	***2/6/2019***
EXAM 2	***Chapters parts of 6, 7,9, and parts of 10***	***3/5/2019***

EXAM 3	***Chapters parts of 10,11, and 12***	***4/7/2019***
EXAM 4	***Chapters 13, 14,15,16 and 18***	***TBA***

QUIZZES:

1. *There are a total of 8 quizzes.*
2. *Quizzes are administered at the end of the lecture session.*
3. *Each QUIZ is worth 10 points.*
4. *QUIZZES are a combination of multiple choice, T/F, fill-in the blank, short answers, and mix-and-match style questions.*
5. *You will have 7-9 minutes to complete the quiz.*
6. *Graded quizzes will be returned in workshops and the correct answers will be discussed by teaching assistants.*
7. ***No quiz grades will be dropped***
8. *There is one surprise free quiz.*
9. ***All 8 quizzes will account for 8% of your final grade***

MindTap ASSIGNMENTS:

*Assignment details will be posted on elearning. All these assignments (**pre, post and other**) together will account for **12% of your final grade**. Assessments will not be accepted past the due date.* ***Please keep checking the elearning course page for links to take you to the date view for assessments for every chapter. Please note that the assessments will be released every Monday according to the syllabus.***

PRE-ASSESSMENTS/VIDEO ACTIVITIES/OTHER ACTIVITIES DUE BEFORE CONCEPTS ARE DISCUSSED IN LECTURE:

1. These are assessments before the chapter is discussed in lecture.
2. These assessments may be assigned every week.

3. These assessments **may be set up for grading**. When it is set up for grading, the grade will carry over to your gradebook. However, your points for these pre-assessments are **based not on how many questions you answer correctly (how many points you received) rather if you completed the full question set**. Partial completion will receive no points.
4. If you incur technical difficulties, please email me the day before the assessment is due.
5. These assessment links may be found on the elearning course page. **ALWAYS USE THESE LINKS TO ACCESS AND COMPLETE YOUR ASSESSMENTS.**

POST-LEARNING ASSESSMENTS/CONCEPTUAL ACTIVITIES ARE DUE AFTER THE CHAPTER IS DISCUSSED IN LECTURE:

1. *These assessments are due after the Chapter is discussed in lecture*
2. *These may be assigned every week.*
3. *These are graded assignments only.*
4. *These are set up for three attempts and the best score will be recorded.*
5. *The assessment links can be found on the elearning course page under Chapter numbers. **PLEASE USE THESE LINKS TO DO YOUR ASSESSMENTS.***
6. *Once you have completed the assessment, it will populate in your gradebook almost instantaneously. Please note that if you log into MindTap/Cengage and do your assessment there, your grade might not effectively transfer over to elearning.*
7. *These assessments are timed and may have multiple attempts. And the best score will be sued in some of these assessments not necessarily all of them.*
8. *If you incur technical difficulties, please email me the day before the assignment is due*.

EXAMS:

1. *There are four exams in this course.*
2. *All four EXAMS are required and **NO EXAM GRADE WILL BE DROPPED***
3. *EXAM DATES are shown in the syllabus.*
4. *The LAST EXAM (EXM IV) (Date -TBD) is not cumulative.*
5. *All EXAMS will cover chapters taught in prior lectures.*
6. *EXAMS will be structured as a mixture of multiple choice, T/F, Fill-in the blanks, Mix and match, and a few free response questions.*
7. *You will need a scantron for your every exam **(Scantron # F-1712-PAR-L)** .*

8. *Graded Exams will not be reviewed in workshops.*
9. *You will receive Student test reports (these reports will show your performance for the scantron portion of the exam only) for viewing in workshops. After viewing, you will return these reports to the teaching assistants.*
10. *The instructor will hold office hours to view and discuss your Free- response section of the exams.*
11. *Details on office hours for EXAM Review will be posted on elearning. For further details on office hours for Exams, see below.*
12. *If requesting a make-up for any of the four exams due to extracurricular activities or team sport activities, please contact me two weeks prior to the exam date.*
13. *For Exam purposes only, when there are conflicts between the information contained in the book and the information contained in the power point lectures, material presented in the lectures by the instructor will be considered correct.*
14. *Please see below for MAKE-UP Exam rules.*

GRADE DISTRIBUTION

For midterm and final grades assigned to the lecture section of the course (BIOL 2311.001) will be assigned to your workshop course (BIOL 2111-) as well.

	Total #	***points for each***	***Dropped/free quiz***	***Maximum possible points***	***% of final grade***
Lecture Exams	*4*	*50*	*0*	*200 (four exams are weighted equally)*	*80% (weighted)*
QUIZZES	*8*	*10*	*1*	*80*	*8% (weighted)*
Pre-Assessments	*15*	*varied*	*None*	*Varied points but completion only*	*4% (weighted)*
Post-assessments/ Conceptual activities	*12*	*varied*	*None*	*Varied and graded*	*8% (weighted)*
			TOTAL	*Total points*	*100% (weighted)*

The letter grades provided after exams should be treated only as a reflection of your relative performance when compared to the rest of the class. The final course grade will not be based on these letter grades, but on the

total of the numeric scores of all four exams, the quizzes and the assessments. ***There is no work available for extra credit for this course.***

MAKE-UP EXAMS:

These exams will be scheduled on a need only basis. If you are unwell and unable to attend the exam, please email the instructor at the earliest available opportunity. Also, please remember to bring a copy of the doctor's note on the day your make-up exam is scheduled. These exams will be scheduled to the convenience of the teaching assistants (graduate) or the instructor.

EXAM OFFICE HOURS:

Instructors will send announcements on elearning about office hours for viewing exams after they have been graded. Please be sure to come and visit the instructor during these hours. If the allotted time is in conflict with your classes, ***please email the instructor in advance for an alternate time****. No grade changes will be made three weeks after the day the exam was administered.*

SUPPLEMENTAL INSTRUCTION SESSIONS:

Supplemental Instruction (SI) is offered for this course. SI sessions are free group study opportunities, scheduled twice every week. These sessions are facilitated by an SI Leader, who has taken the course recently and has achieved a high final grade. Our SI leader for this semester is **BRIAN TORRES**. Attendance is voluntary. For information about the days, times, and locations for SI sessions, refer to http://www.utdallas.edu/studentsuccess/help-with-courses/supplemental-instruction/

Here are the links to UT Dallas policy on student conduct and syllabus:

https://go.utdallas.edu/syllabus-policies

https://www.utdallas.edu/conduct/