

**Welcome to Cell Biology!** This course will explore the astonishing workings of eukaryotic cells! Knowledge acquired during this course will help you understand the myriad processes that occur within our cells, and will also help you begin to understand how cellular function underlies and is responsible for the functions of tissues, organs and entire organisms.

**THIS SYLLABUS IS NOT A CONTRACT.** Dr. Adams reserves the right to revise any aspect of this syllabus at any time.

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**Regularly-scheduled Office Hour:**                      **Friday 12:30 – 1:30 PM outside the USU Library, or by appointment.**

**Lecture time and place:**                      **Monday, Wednesday & Friday                      11:30 AM - 12:20 PM                      in FAV 262**

**Course Objective:** To **acquire factual knowledge** about the structures and functions of eukaryotic cells. Be aware that cells are **extremely complex**, and it will be necessary for you to **memorize** an **enormous** amount of **factual information**.

**Prerequisites:** BIOL 1620 (General Biology), BIOL 3060 (Principles of Genetics), and CHEM 2300 or 2310 (Organic Chemistry). **Biochemistry** (CHEM 3700 or 5700) is **highly recommended** but is not a prerequisite.

**Recommended (not required) Textbook:**                      *Molecular Biology of the Cell*, 6<sup>th</sup> Edition (MBoC6).

**Grading:** Your final grade will be determined by the total number of points you score on the **seven** (7) exams, divided by the total number of possible points on those exams. Your **two** (2) lowest exam scores will be dropped and will not count toward your grade. **There is no other source of points. There are no opportunities for extra credit in this course.**

The grading scheme used to determine final grades will be:

A	=	92.5 – 100 %
A-	=	< 92.5 to 89.5 %
B+	=	< 89.5 to 84.5 %
B	=	< 84.5 to 79.5 %
B-	=	< 79.5 to 74.5 %
C+	=	< 74.5 to 69.5 %
C	=	< 69.5 to 64.5 %
C-	=	< 64.5 to 59.5 %
D+	=	< 59.5 to 54.5 %
D	=	< 54.5 to 49.5 %
F	=	< 49.5 %

**IMPORTANT INFORMATION about the grading scheme:** Dr. Adams' grading scheme is considerably more generous than the USU Standard grading scheme. Additionally, his grading scheme has a **0.5% bonus** built into it. For example, the break point between a B- and a B grade occurs at 79.5% instead of at 80%. For these reasons, **DR. ADAMS WILL NOT CHANGE YOUR FINAL GRADE EVEN IF YOU ARE VERY CLOSE TO THE NEXT HIGHER GRADE.** For example, if your total percentage point score is 92.49999 %, you will get a final grade of "A-" and not "A".

**Exams:** There will be **seven (7) exams** worth **approximately 60 - 80 points** each. Your **two (2) lowest** exam scores will be automatically dropped by Canvas, and will **not** be used to calculate your final grade.

Each lecture will be worth **approximately 16 points** on the exam. Each exam will cover (mostly) material presented since the previous exam.

On exams, you will be responsible for all material **presented verbally** in class, **written on the whiteboard** during class, or contained within **PowerPoint presentations** and/or **audio or video recordings** posted on Canvas.

If you don't attend class - for whatever reason - it is **your responsibility** to obtain the material **from your classmates or from the slides and audio/video recordings posted on Canvas (if any exist)**. No make-up lectures will be given. **Audio recordings** of most lectures will be posted on Canvas. Occasionally, audio recordings are lost and not available.

**Missed Exams:** If you miss an exam - **for any reason** - you will receive **ZERO (0)** points as your score for the missed exam, and that exam score will become one of your two (2) dropped exam scores. **No make-up exams or early exams or special exams will be given.**

Any disputes regarding your exam score must be discussed with Dr. Adams **within three (3) working days** of the day that exam score was emailed to you from the Scantron desk.

**Disability Resource Center (DRC):** If you have a condition that requires accommodation, please contact Dr. Adams and document your situation through the DRC during the first week of classes.

**Requests for an incomplete (I) grade:** Must comply with current USU regulations (see Schedule of Classes).

### TENTATIVE LECTURE SCHEDULE

<u>Date</u>	<u>Topic</u>	<u>Recommended Readings in MBoC6</u>
August 28	How to succeed in this course – Cell Membrane Structure	pp. 565 - 576
August 30	Membrane Proteins I	pp. 576 - 594
September 1	Membrane Proteins II	pp. 576 - 594
September 4	<b>NO CLASS</b> due to <b>Labor Day holiday</b>	
September 6	Principles of Cell Membrane Transport	pp. 597 - 611
September 8	Ion Channels & Membrane Electrical Properties	pp. 611 - 620
<b>September 11</b>	<b>EXAM 1 (~ 80 points possible)</b>	
September 13	Electrical Signaling by Cell Membranes	pp. 620 - 627
September 15	Chemical Synaptic Transmission I	pp. 627 - 638
September 18	Chemical Synaptic Transmission II	pp. 627 - 638
September 20	Compartmentalization of Cells	pp. 641 - 649
September 22	Transport between the Nucleus & the Cytosol	pp. 649 - 658
<b>September 25</b>	<b>EXAM 2 (~ 80 points possible)</b>	
September 27	Peroxisomes & Endoplasmic Reticulum I	pp. 666 - 691
September 29	Endoplasmic Reticulum II	pp. 669 - 691
October 2	Intracellular Membrane Traffic	pp. 695 - 710
October 4	The Golgi Apparatus	pp. 710 - 722
October 6	Lysosomes	pp. 722 - 730
<b>October 9</b>	<b>EXAM 3 (~ 80 points possible)</b>	
October 11	Endocytosis & Exocytosis	pp. 730 - 750
October 13	Principles of Cell Signaling	pp. 813 - 831
October 16	Signaling through G-protein-coupled Receptors	pp. 832 - 849
October 18	Signaling through Enzyme-coupled Receptors	PP. 850 - 863
October 20	FALL BREAK DAY - <b>NO Cell Biology class</b>	

<b>October 23</b>	<b>EXAM 4</b> (~ 60 points possible)	
October 25	The Cytoskeleton	pp. 889 - 897
October 27	Actin	pp. 898 - 914
October 30	Myosin & Actin	pp 915 - 925
November 1	Microtubules	pp. 925 - 944
November 3	Intermediate Filaments	pp. 944 - 950
<b>November 6</b>	<b>EXAM 5</b> (~ 80 points possible)	
November 8	Cell polarization & migration	pp. 951 - 960
November 10	The Cell Cycle	pp. 963 - 974
November 13	Control of Cell Division & Cell Growth	pp. 1010 - 1018
November 15	Cell Death	pp. 1021 - 1032
November 17	Stem cells	pp. 1217 - 1260
November 20	<b><u>NO CLASS - THANKSGIVING WEEK</u></b>	
November 22	<b><u>NO CLASS - THANKSGIVING WEEK</u></b>	
November 24	<b><u>NO CLASS - THANKSGIVING WEEK</u></b>	
<b>November 27</b>	<b>EXAM 6</b> (~ 80 points possible)	
November 29	Cell Junctions	pp. 1035 - 1057
December 1	Extracellular Matrix	pp. 1057 - 1081
December 4	Cancer part one	pp. 1091 - 1141
December 6	Cancer part two	pp. 1091 - 1141
December 8	Cancer part three	pp. 1091 - 1141
<b>December 11????</b>	<b>EXAM 7</b> (~ 80 points possible)	<b>This date is tentative.</b>