

## BIOL 40, FALL 2024 – Biochemistry – Professor Wei-Lih Lee, PhD

BIOL 40 involves studies of molecular structure and function from a biochemical point of view, emphasizing the biochemistry of proteins, lipids, and carbohydrates. Topics include protein structure and function, enzymes and enzyme kinetics, lipids and membranes, and carbohydrates and cell walls. The participation of these biomolecules in metabolism is also examined, with an emphasis upon carbohydrate, fatty acid, and amino acid metabolism. The course concludes with an analysis on how metabolism is integrated.

**Lecture (LSC 201):** MWF 10:10-11:15 AM  
X (Th 12:15-1:05 PM) used as indicated in *Class Schedule*

**Discussion:** W 2:10-3:15 PM (LSC 205) or Th 2:25-3:30 PM (LSC 201)  
Used for going over problem sets or discussing relevant research papers  
May attend either W or Th session, or both

**Instructor:** Wei-Lih Lee, LSC 224, phone: (603) 646-8706  
Email: [wei.lih.lee@dartmouth.edu](mailto:wei.lih.lee@dartmouth.edu)  
Office hours: Mon 4:00-5:00 PM (LSC 238) and Fri 4:00-5:00 PM (LSC 238)

**Teaching Assistant:** Rachel Martin  
Email: [Rachel.R.Martin.GR@dartmouth.edu](mailto:Rachel.R.Martin.GR@dartmouth.edu)  
Office hours: Tu 3:30-4:30 PM (LSC 352)

**Required Textbook:** [Fundamentals of Biochemistry, 6th Edition](#), by Destin Heilman, Stephen Woski, Donald Voet, Judith Voet, and Charlotte Pratt (March 2024). E-Book ISBN: 978-1-119-90348-2. If you encounter financial challenges related to purchasing textbook for this class, please reach out to the instructor

**Available:** Lecture notes and powerpoint presentations will be posted on Canvas

**Prerequisites:** BIOL 12 or 19 (Cell Structure and Function)  
and CHEM 52 or 58 (Organic Chemistry)

<b>Exams and grading:</b>	Exam 1	100 points
	Exam 2	100 points
	Exam 3	100 points
	Final exam	120 points
	Problem sets	15 points
	Quizzes	15 points

The first three exams cover lectures for each section (see *Class Schedule* for dates and *Exams and Grading Policies* for format). The final exam is semi-comprehensive, with emphasis on the last section of the course but it will incorporate major information from earlier sections in the course. Your grade will be calculated using two different methods and you will receive the higher grade of the two. **Method A:** total out of everything (i.e., a percentage based on a total of 450 available points). **Method B:** dropping the lowest of the first three exams (i.e., a percentage based on a total of 350 points). In both cases, the final exam is always counted.

**Class Schedule:**

<b>Date</b>	<b>Lect #</b>	<b>Topic</b>	<b>Reading (pg #)</b>
M Sep 16	1	Introduction: biochemical evolution	1-12, posted PDFs
W Sep 18	2	Bonds, properties of water, buffers	24-45
X Sep 19		Buffers (continue)	
F Sep 20	3	Amino acids	47-62
M Sep 23	4	Primary protein structure and purification	63-66, 1052-1060
W Sep 25	5	Sequencing; protein structure	1064-1070, 1073-1076
X Sep 26	6	3-D protein structure	69-105, 108-110
F Sep 27	7	Proteins: myoglobin and hemoglobin	111-119
M Sep 30	8	Proteins: myoglobin and hemoglobin (continue)	
W Oct 02	9	Introduction to Enzyme and Kinetics	13-21, 262-270
<b>X Oct 03</b>		<b>Exam Review Session</b>	
<b>Th Oct 03</b>		<b>Exam #1, 7:00-9:00PM, covers Lectures #1-8</b>	
F Oct 04	10	Enzyme Kinetics (continue)	303-325
M Oct 07	11	Enzymatic Catalysis	271-280
W Oct 09		Enzymatic Catalysis (continue)	
X Oct 10	12	Enzyme Reaction Mechanisms	287-297
F Oct 11		Enzyme Reaction Mechanisms (continue)	
M Oct 14	13	Enzyme Regulation	297-299, 326-334
W Oct 16	14	Lipids	187-200
X Oct 17	15	Membranes and Membrane Transport	201-217, 234-241
F Oct 18		Membrane Transport (continue)	245-254, 257-259
<b>Su Oct 20</b>		<b>Exam Review Session, 1:30-3:00 PM</b>	
M Oct 21	16	Metabolism and Bioenergetics	392-422
<b>M Oct 21</b>		<b>Exam #2, 7:00-9:00PM, covers Lectures #9-15</b>	
W Oct 23	17	Metabolism and Bioenergetics (continue)	
X Oct 24	18	Carbohydrates	123-148
F Oct 25	19	Glycolysis	427-449
M Oct 28	20	Entry and exit from glycolysis	450-460
W Oct 30	21	Gluconeogenesis	461-466
X Oct 31		Gluconeogenesis (continue)	
F Nov 01	22	Regulation of Glycolysis and Gluconeogenesis	466-473
M Nov 04	23	Glycogen; Pentose Phosphate Pathway	485-506, 474-478
W Nov 06	24	The Citric Acid Cycle	512-541
<b>W Nov 06</b>		<b>Exam Review Session, 5:00-6:30 PM</b>	
X Nov 07	25	Oxidative Phosphorylation Part 1	544-553
<b>Th Nov 07</b>		<b>Exam #3, 7:00-9:00PM, covers Lectures #16-23</b>	
F Nov 08	26	Oxidative Phosphorylation Part 1 (continue)	
M Nov 11		Oxidative Phosphorylation Part 2	554-586
W Nov 13	27	Fatty Acid Metabolism: fate of acetyl CoA	633-669
X Nov 14	28	Amino Acid Metabolism	690-720
F Nov 15	29	Integration of Metabolism	747-774

**Final Exam (semi-comprehensive with emphasis on Lectures #24-30, including all pre-lecture material):** Friday, Nov 22, 11:30 AM

\*\*\*\*\*

**Course Goals and Learning Objectives:**

1. To gain a solid foundation in biochemistry. This course synthesizes material from courses you previously took and will put both biological and chemical aspects of what you have learned into context. Biochemistry provides the background required for upper-level courses (e.g., BIOL 69: Cell Signaling, BIOL 76 Advanced Genetics, and BIOL 71.01: Microtubule Dynamics and Motor Functions in Cell Biology), as well as for medical, dental, and graduate level studies.
2. To develop quantitative skills needed to understand biochemical reactions in living cells. Quantitative skills are essential to science and many other disciplines. This course will help develop and hone your math skills by learning to solve biochemical reactions (through working on problem sets) relevant to all living organisms.
3. To become conversant in biochemistry. Like many biology courses, biochemistry requires learning a “vocabulary” and then applying this vocabulary to biological questions. For this reason, you will need to commit to memory the structures of amino acids, the glycolytic pathway, and several enzymatic reaction mechanisms (i.e., the vocabulary!). Beyond knowing the vocabulary, one has to be able to apply the knowledge in order to gain new insights, and for this reason, exam questions will sometimes go beyond what was directly discussed in class and ask you to apply information from the course to novel questions.

**Expectations:**

Here’s what we expect from you:

- 1) To take detailed notes while you are listening to lectures and recorded videos
- 2) To attend and participate in discussions session on Wed and/or Thurs, be mentally prepared to think about biochemistry
- 3) To be willing to ask questions and participate in class activities
- 4) To listen to pre-lecture videos and complete quizzes as scheduled
- 5) To utilize active learning techniques to master course material
- 6) To work on the problem set questions and turn them in every week
- 7) To observe and follow the Academic Honor Principle

Here’s what you can expect from the TA and me:

- 1) To bring expertise and enthusiasm to the class
- 2) To be willing to answer questions and facilitate discussions
- 3) To challenge you to stretch beyond your comfort zone
- 4) To encourage you to try new approaches for studying and learning that are “active”
- 5) To provide opportunities for you to practice problem solving

**Course Mode:**

We will meet in-person for lectures on MWF and Th (X-hour) at the normal meeting times for the Period 10 timeslot. Discussion sessions will be led by TA and will also meet in-person on W and Th at 2:10-3:15 PM and 2:25-3:30 PM, respectively. The discussion sessions will be used for going

over the answer key for the problem sets, or for discussion of a research paper relevant to the topic of the exam unit. You may attend either or both discussion sessions on W and Th. All lectures will be recorded but will not be simulcast via zoom. All recordings are accessible via Panopto on Canvas. Be sure to read the “Consent to Record” section, since you are agreeing to this by enrolling in the class.

### **Attendance:**

You are expected to attend class in person unless you have made alternative arrangements due to illness, medical reasons, or having to isolate due to COVID-19. For the health and safety of our class community, **please do not attend lecture or discussion sessions when you are sick**, nor when you have been instructed by Student Health Services to stay home. Please note that multiple respiratory viruses (RSV, influenza, and COVID-19 variant [KP.3.1.1](#)) might be spreading widely and rapidly this fall. Be sure to take rest and recover if you are feeling ill. You will be able to view recordings of the lecture on Canvas if you are unable to attend.

### **COVID-19 Information and Safety Protocols:**

In accordance with [current College policy](#), all members of the Dartmouth community are strongly encouraged to follow CDC’s respiratory virus guidance, which includes:

- Staying up to date with your immunizations, including COVID-19 vaccines
- If you have symptoms of a respiratory virus, stay home and away from others
  - You can return to regular activities when your symptoms are getting better overall for at least 24 hours, **and** you have not had a fever and are not using fever-reducing medication
  - After returning to regular activities, take precautions for at least 5 days. If you develop a fever or start to feel worse, stay home and away from others again
- If you test positive for a respiratory virus but do not have symptoms, take precautions for at least 5 days because you may be contagious
- Precautions include taking steps for cleaner air, wearing masks, physical distancing, and testing

The recommendations above, which are a subset of the current College policy, are those that pertain to our classroom, discussion sessions, and office hours. If you are wearing a mask and need to take a quick drink during class, please dip your mask briefly for each sip. Mask wearing will not come with a stigma! Additional COVID-19 protocols may emerge. Please pay attention to emails from the senior administrators at the College. I will communicate any changes and the resulting implications to our class community via Canvas.

### **Accommodations:**

Students requesting disability-related accommodations and services for this course are required to register with Student Accessibility Services (SAS; [Apply for Services webpage](#); [student.accessibility.services@dartmouth.edu](mailto:student.accessibility.services@dartmouth.edu); 1-603-646-9900) and to request that an accommodation email be sent to me in advance of the need for an accommodation. Then, students should schedule a follow-up meeting with me to determine relevant details such as what role SAS or its [Testing Center](#) may play in accommodation implementation. This process works best for everyone when completed as early in the quarter as possible. If students have questions about whether they are eligible for accommodations or have concerns about the implementation of their accommodations, they should contact the SAS office. All inquiries and discussions will remain confidential.

### **In-class Responses via Poll Everywhere:**

I will use Poll Everywhere to present “clicker” questions during lectures. One purpose for polling during class is that it allows me to gauge your understanding in real time. The best way for me to gain an accurate assessment is if the majority of the class answers each of the in-class questions. Additionally, research has demonstrated that in-class questions help students to engage with the course material, and this facilitates learning and synthesis. It will help me if *ALL* of you participate (instead of just the ones who are willing to “raise” their hands). You will be answering anonymously – I will not see what answers you give. The data will be tabulated for the entire class, not for individual students. Although your grade will not depend on your participation in Poll Everywhere, I hope all of you will participate fully throughout the term.

The easiest and most convenient way to respond to clicker questions is to use your smartphone. If this is your first time using Poll Everywhere, please download the app here:

iOS: <https://itunes.apple.com/us/app/poll-everywhere/id893375312>

Android: <https://play.google.com/store/apps/details?id=com.polleverywhere.mobile>

If you are not able to use a smartphone to respond, you may use another internet-enabled device such as a tablet or a laptop. In the app, type POLLEV.COM/biol40 to join the presentation. If you have any technical questions or problems, please contact [edtech@dartmouth.edu](mailto:edtech@dartmouth.edu) as they will be able to assist.

### **Problem Sets and Research Papers:**

Problem sets will be posted every week to help you develop and hone your skills in solving biochemical questions. Sometimes, questionnaire about a research article – selected from the literature to enhance your understanding of biochemical topic relevant to the exam unit – will be posted instead of problem set questions. You will be asked to work on the assigned problem sets or the paper-related questionnaire as homework, and then submit them in Canvas as part of your participation grade (up to 15 points). In order to receive credit, you must submit the weekly homework by the specified date and time. Late submission is unacceptable and will not receive any points. Please note: the answers you provide on these homework assignments will be checked and graded for completion rather than for accuracy. We will use them to (1) help us assess your understanding of the material, and (2) ensure that you complete the assigned problem set or read the research paper either before or after attending the W/Th discussion sessions. For the first week of classes, although we will only have covered two lectures before the W/Th discussion session, we ask that you complete and submit the assigned problem set as a chance for you to “practice” submission. However, this initial submission will not be counted toward your grade.

### **Pre-lecture Quizzes:**

I will use short videos to present introductory or supplementary material that is important for in-class lectures. Part of your participation grade (up to 15 points) will be based on short quizzes that you will complete after viewing the pre-lecture videos. To receive credit, you must complete the quiz by 11:59 PM (midnight) the day before the specified lecture class meeting. I will use these quizzes to (1) help me assess your understanding of the material, and (2) ensure that you view the pre-lecture video before class. While taking the quiz you may refer to any notes you took while watching the video.

### **Exams and Grading Policies:**

The exams will be a mixture of testing your mastery of the information and applying your knowledge to problem solving. See *Class Schedule* for the date and time of each exam. All exams must be completed in-person within the allotted time.

All completed exams will be uploaded to Gradescope for grading by me and my graders. After the grading is done, you will be able to view your graded exam (excluding the final exam) on Gradescope. The following summarize the main points regarding the grading procedures:

1. After the exam has been graded and returned, a copy of the answer key will be posted on the Canvas site. Please review the answer key thoroughly and thoughtfully and make sure that you understand the errors in your exam and why you made them.
2. All exams are graded carefully and consistently. The number of points given for each answer is final. If, after reviewing your answers and comparing them to the posted answer key, you find an arithmetic error or detect an omission by the grader for one of your answers, you must observe the following procedures for submitting an error correction request:
  - a) Prepare an electronic cover page (file format: Word or PDF) and name the file as "error correction request – your name". Specify the page and the question number you are requesting for error correction.
  - b) If you determine that your answer contains all the information indicated in the answer key, but you did not receive full credit, simply indicate the number of the question to be re-evaluated and state in one or two short, descriptive sentences (must be typed) what makes your answer correct.
  - c) Email your typed cover page to me within 7 days after you receive your graded exam.

You should only submit an error correction request *if and only if* you think that the grader has made an arithmetic error OR you have determined that your answer is consistent with the answer key. Submission after the 7-day deadline is unacceptable. We reserve the right to re-evaluate the entire exam. The error correction process may take a few days (sometimes longer). You will be notified through email after the re-evaluation is completed.

**A final note about exams and grading scheme:** You are not competing against each other for grades in BIOL 40. All grades, up until the final letter grade is decided, are recorded as numerical points. I do not assign letter grades to individual exams. Your final grade will be calculated according to the following process:

1. I will rescale the total scores from Problem Sets to a number on a 15-point scale
2. I will next rescale the total scores from Quizzes to a number on a 15-point scale
3. I will then sum all the points from Exams, Problem Sets, and Quizzes and calculate the final percentage using both **Method A** (out of 450 points) and **Method B** (dropping the lowest of the first three exams; out of 350 points).
4. I will convert the higher of the two calculated final percentages to a letter grade according to the following scheme:
  - 89.00 – 100 → A
  - 85.00 – 88.99 → A-
  - 81.00 – 84.99 → B+
  - 75.00 – 80.99 → B
  - 69.00 – 74.99 → B-
  - 65.00 – 68.99 → C+
  - 60.00 – 64.99 → C

- 55.00 – 59.99 → C-
  - 50.00 – 54.99 → D
  - 0 – 49.99 → E
5. Please note I reserve the right to adjust the grading scheme to account for highly skewed distribution or to accommodate borderline cases. However, grades will never be shifted downward.

### **Missing an Exam:**

In case of illness, family emergency, or academic conflict, special arrangements for taking the exam can be made, but only if 1) you notify me 24 hours in advance prior to the scheduled time for the exam, and 2) your need to take the exam at a time other than the scheduled time is clearly justified. Failure to take an exam at the scheduled time, or failure to submit the exam within the allotted time, will result in a grade of zero for that exam. In the event you are ill and unable to prepare for or write an exam, you should seek medical attention to determine if you need treatment; this is for your own health and for the health of others around you.

### **Academic Honor Principle: Specific Expectations for BIOL 40**

The [Dartmouth College Student Handbook](#) states "Fundamental to the principle of independent learning are the requirements of honesty and integrity in the performance of academic assignments, both in the classroom and outside. Dartmouth operates on the principle of academic honor, without proctoring of examinations. Students who submit work which is not their own or who commit other acts of academic dishonesty forfeit the opportunity to continue at Dartmouth."

The Dartmouth's [Academic Honor Principle](#) and the [Arts and Sciences Academic Honor Policy for Undergraduates](#) as applied to BIOL 40 affects the exams and pre-lecture quizzes. These include (but are not limited to) the following:

- (a) All exams (including the final exam) are closed-book assessments. All pre-lecture quizzes are open book, but they are not open person or open web. You must complete both the exams and pre-lecture quizzes entirely by yourself, without any assistance from any person or the internet. The answers that you provide must be entirely your own work. Any communication prior to the examination, or during the examination, with anyone having knowledge about the content of the exam would constitute a breach of the Dartmouth's Academic Honor Principle and the Arts and Sciences Academic Honor Policy for Undergraduates.
- (b) Our policy permits the re-submission of exams for potential error correction by the instructor. Any alteration of the answers between the time when the graded exams were returned to the student and the time when the exam was submitted for error correction would constitute a breach of the Dartmouth's Academic Honor Principle and the Arts and Sciences Academic Honor Policy for Undergraduates.

Honesty is the foundation of the academic pursuit of knowledge. In recognition of this, I will not overlook any violations of the Academic Honor Principle. Violation of any of the above will result in a grade of zero for the exam, with the exam also counted toward your final grade in the course. Potential violations will also be reported to the Dartmouth College Committee on Standards.

### **Use of Generative Artificial Intelligence:**

Utilizing Generative Artificial Intelligence (GenAI) to facilitate learning and overall productivity is becoming more common. While GenAI has shown remarkable potential as a supplementary tool for thinking and problem solving, there are many things it cannot do. There are also real downsides to over-relying on it.

Please read the new Dartmouth's [Generative AI policy](#). In this course, we will be developing skills that are important to practice on your own. We will treat GenAI similarly to other resources that you use, like the internet, to help you develop those skills. Here, then, are our rules:

1. Use of GenAI on problem sets (PSETs) assignment is permitted at your discretion, provided that it is judiciously implemented and reviewed, and properly documented at the time of submission. For any PSET assignment on which you use GenAI, you must turn in a cover letter, including an explanation of your reasoning for using the technology (one to two paragraphs will suffice), as well as a comprehensive and verbatim list of the prompts you used, and a note on how you checked the accuracy of the output (another paragraph here).
2. Because GenAI is treated similarly as other resources that you have access to (e.g., internet), use of GenAI on pre-lecture quizzes and exams will constitute a violation of the Dartmouth's Academic Honor Principle and the Arts and Sciences Academic Honor Policy for Undergraduates. Please see section on *Academic Honor Principle: Specific Expectations for BIOL 40*.

If you're unsure about whether a specific AI tool is permitted for use on any assignment in this course, please reach out to me.

### **Religious Observances:**

Dartmouth has a deep commitment to support students' religious observances and diverse faith practices. Some students may wish to take part in religious observances that occur during this academic term. If you have a religious observance that conflicts with your participation in the course, please meet with me as soon as possible – before the end of the second week of the term at the latest – to discuss appropriate course adjustments.

### **Wellness Concerns:**

I recognize that academic terms at Dartmouth are challenging and intensive, and that classes are not the only demanding part of your life. There are a number of resources available to you on campus to support your wellness, including:

- [Primary Care and Dartmouth College Health Service \(Dick's House\)](#)
- [Counseling Center at Dick's House](#), call 603-646-9442, available 24/7
- [Student Wellness Center](#) in Berry Library
- [Pastoral Counseling](#) through the William Jewett Tucker Spiritual Center
- [Dartmouth Student Mental Health Union](#) if you would like to speak to a peer support listener
- Your [Undergraduate Dean](#)

Your well-being is very important to me. Please make me aware of anything that will hinder your success in this course.

### **Title IX Safety and Inclusivity:**

At Dartmouth, we value integrity, responsibility, and respect for the rights and interests of others, all central to our Principles of Community. We are dedicated to establishing and maintaining a safe and inclusive campus where all have equal access to the educational and employment



opportunities Dartmouth offers. We strive to promote an environment of sexual respect, safety, and well-being. In its policies and standards, Dartmouth demonstrates unequivocally that sexual assault, gender-based harassment, domestic violence, dating violence, and stalking are not tolerated in our community.

The Sexual Respect Website (<https://sexual-respect.dartmouth.edu>) at Dartmouth provides a wealth of information on your rights with regard to sexual respect and resources that are available to all in our community.

Please note that, as a faculty member, I am obligated to share disclosures regarding conduct under Title IX with Dartmouth's Title IX Coordinator. Confidential resources are also available, and include licensed medical or counseling professionals (e.g., a licensed psychologist), staff members of organizations recognized as rape crisis centers under state law (such as WISE), and ordained clergy (see [https://dartgo.org/titleix\\_resources](https://dartgo.org/titleix_resources)). Should you have any questions, please feel free to contact Dartmouth's Title IX Coordinator or the Deputy Title IX Coordinator for the Guarini School. Their contact information can be found on the sexual respect website <https://sexual-respect.dartmouth.edu>.

### **Consent to Recording:**

With the evolving COVID-19 situation, there may be a situation that entails a switch to remote instruction. If that is the case, please be mindful of the following:

#### (1) Consent to recording of lecture and group meetings

- a) By enrolling in this course, you affirm your understanding that this course and any associated group meetings involving students and the instructor, including but not limited to scheduled and ad hoc office hours and other consultations, may be recorded within any digital platform used to offer in-person or remote instruction for this course.
- b) You further affirm that the instructor owns the copyright to their instructional material, of which these recordings constitute a part, and distribution of any of these recordings in whole or in part without prior written consent of the instructor may be subject to discipline by Dartmouth up to and including expulsion.
- c) You authorize Dartmouth and anyone acting on behalf of Dartmouth to record your participation and appearance in any medium, and to use your name, likeness, and voice in connection with such recording; and
- d) You authorize Dartmouth and anyone acting on behalf of Dartmouth to use, reproduce, or distribute such recording without restrictions or limitation for any educational purpose deemed appropriate by Dartmouth and anyone acting on behalf of Dartmouth.

#### (2) Requirement of consent to one-on-one recordings

By enrolling in this course, you affirm that you will not under any circumstance make a recording in any medium of any one-on-one meeting with the instructor without obtaining the prior written consent of all those participating, and you understand that if you violate this prohibition, you will be subject to discipline by Dartmouth up to and including expulsion, as well as any other civil or criminal penalties under applicable law.

### **Access to Campus Resources:**

Many of you may be facing greater challenges than usual given the post pandemic-related changes to your living and learning environment, as well as changes to public health concerns, and a host of other factors (e.g., housing or food insecurity, new or changing caregiving responsibilities,

visa and accessibility concerns, access to health and mental health support, and so on). I want you to be aware of the campus resources available to support your needs. While the situation is constantly evolving, many offices are prepared to meet with you via phone or Zoom or in-person. For concerns about health and wellness, you may reach out to the [Dartmouth Health Service](#) (603-646-9400 or Secure Message in DartHub), [Counseling Services](#) (603-646-9442), and the [Student Wellness Center](#). For academic needs, you may contact your [Undergraduate Dean](#) (603-646-2243), [Student Accessibility Services](#) (603-646-9900), and the [Academic Skills Center](#) (603-646-2014). Students with concerns related to campus employment may connect with the [Student Employment Office](#) (603-646-3641). Those with visa-related concerns may reach out to the [Office of Visa and Immigration Services](#) (603-646-3474). I encourage you to take advantage of these resources, and to speak with me if you need support in the class.

### **Top 10 Suggestions for Surviving BIOL 40:**

1. Keep up with the assigned readings. Read the text before class, or soon after class. Work on the posted problem sets. Go over the material again the same day as covered in lecture.
2. Attend lectures. The lectures do not simply re-iterate material from the textbook. Exams are primarily based on material from the lectures and problem sets.
3. Ask questions in class. If you have a question, someone else probably also has the same question.
4. Response to Poll Everywhere questions during class. Besides allowing for group participation and immediate feedback, the physical act of responding to polls may stimulate thinking and improve comprehension and learning of new material. Make it work for you.
5. Attend discussion sessions. The weekly discussion sessions (led by TA) will be used to go over problem set questions and to discuss papers not covered in the lecture. You might not necessarily be able to do every problem in the posted problem sets before discussion, but answers to the most important problems will be covered in the discussion sessions.
6. Come to office hours and use Ed Discussion. Office hours will be used as a way to have smaller discussion on the areas that you find most important or troublesome, especially relating to lecture slides. Ed Discussion on Canvas offers another way to engage in discussion with other students and TA.
7. Form study groups. Working with other people on problems and concepts invariably helps with learning the material.
8. Use information on Canvas. Posted under Syllabus, Lectures, and Problem Sets.
9. Be well rested before taking the exams. When tired, one can sometimes remember information memorized from an all-nighter, but it will be almost impossible to apply that to a novel situation.
10. Review your own exams. The exams will build on each other in terms of the types of material one needs to master, so it is important to stay on top of the material in order to do well on the subsequent exam. I recommend that, after the exam has been graded and returned to you, work through the questions again so that you can effectively review the material in preparation for the next exam(s).