

SYLLABUS: COURSE # 11:115:301 & 16:682:531 INTRODUCTORY BIOCHEMISTRY & BASIC BIOCHEMISTRY SPRING 2023 All SECTIONS

Course Overview

Course Description

This is a one semester survey course of biochemistry and will focus on an introduction to proteins, nucleic acids, carbohydrates and the lipid family of biological molecules. In addition, we will discuss metabolism of carbohydrates, fatty acids and nitrogen in the body and how signaling molecules aid in the control of biochemical events. In order to appreciate these, students will be taught the basic structure of molecules and the biochemical reactions that allow them to form more advanced macromolecules in the organism. At the conclusion of this course students should be able to explain how proteins, nucleic acids, carbohydrates, lipids and other small molecules biochemically contribute to metabolism supporting the organism's vast functions.

Instructor

Instructor: Kyle Murphy, Ph.D.

Email address: Please use the Discussion Tool on Canvas

Office hours: I will be checking the Discussion tool for comments and questions daily. I will host office hours as posted under the Zoom tool located in Canvas (on the left-hand toolbar).

Diversity, Equity and Inclusion

The SEBS/NJAES Office of Diversity, Equity, and Inclusion and your professor are committed to supporting diversity, equity, and inclusion as core values in our work, interactions, and planning. Central to our ability to function as a community of learning and research is practicing respect for each other, developing a culture of belonging, and ensuring a commitment to everyone's dignity.

Course Delivery

This course uses Canvas as the learning management system to deliver most course content. To access the course, please visit <https://tlr.rutgers.edu/canvas>. For more information about course access, support or technological assistance with the Canvas site contact the Canvas Help Desk via email at 877-361-1134 immediately upon having an issue. You will also be using Modified Mastering Chemistry and this should be integrated into Canvas for you. Do not ask your professor to solve technical issues you are experiencing in Canvas, online proctoring or Mastering Chemistry. Instead, please call or email the respective company and follow up with them to resolve your technical issues. To protect yourself from possibly missing a deadline

because of a technical issue, I ask that you work in advance of deadlines to ensure timely completion of assignments (Mastering Chemistry Homework and End of Module quizzes). Please have a backup plan in place in case your computer or your internet go down during the semester as make-ups will not be given due to technical difficulties. You may wish to check on the hours and locations of the Rutgers computer labs and/or have a backup plan with a friend or family member to safeguard against missing due dates because of a lack of available or availability to resources. If you are in an online section or if the in-person section goes online, then the exams will be proctored by Respondus Monitor, an online proctoring service who will record the audio and visuals of your session. You will need an uninterrupted internet connection (I highly suggest a cat6 cable plugged directly into your router). The proctoring service may require software to run on your computer. If you have an issue with this, you need to raise it to me before the end of add/drop period.

Prerequisites

Elementary Organic Chemistry or Equivalent

- 01:160:209 or
- 01:160:307 or
- 01:160:315 or
- 21:160:335

Course Learning Objectives

By the end of this course, students should successfully be able to:

- explain and apply core concepts of matter and energy transformation, including thermodynamic calculations, enzyme catalysis and the coupling of exergonic and endergonic reactions in biochemical systems.
- explain and examine core concepts of homeostasis, the organization of chemical processes, and the regulation of biological molecules in the cell.
- describe and analyze macromolecular structure and function, including the nature of biological macromolecules, their interaction with water, the relationship between structure and function, and mechanisms for regulating their function.
- explain and apply core concepts of biological information focusing on the manner in which information is encoded, transcribed and translated, and the mechanisms by which information is transmitted and maintained across generations.
- analyze and evaluate peer-reviewed literature in order to formulate hypotheses that will further biochemical research required for post-graduate exams and studies.

Course Materials

Required Subscription(s)

- A subscription to Modified Mastering Chemistry/Biochemistry from Pearson or Rutgers bookstore is available, other codes from sources other than this have a high probability of not working for this class). Please see Rutgers bookstore or Pearson's online store directly for optional purchase bundles (the book with the code for Mastering). There will be an integrated button in the Canvas LMS that you will be able to push to get the Mastering Course once the class starts. You don't need a course ID or anything, the button will take you right to the course. There are different ways you can purchase the textbook with the Mastering Chemistry code. You can get an e-text, 3-hole punched pages for a binder, or a hardcover book. The book is on reserve at many of the Rutgers Libraries. If you have a problem with the Mastering Chemistry code, please contact Pearson directly. I will also have a Pearson representative available during one of the scheduled class meeting times (I will announce which meeting prior to the meeting if you have questions).

<https://www.pearsonmylabandmastering.com/northamerica/>

Textbook

- Biochemistry: Concepts and Connections Dean R. Appling, Spencer J. Anthony-Cahill and Christopher K. Mathews, offered in hardcover, 3 ring hole-punched (a-la carte) or e-text text and can be purchased with or without Modified Mastering Chemistry. Please see the Rutgers bookstore or Pearson's store for a bundle package that includes the textbook material and a subscription to Mastering Chemistry/Biochemistry and then you don't need to buy the hard cover text on its own. Reading assignments will be provided out of this textbook. I also have one copy of this text on reserve at various Rutgers libraries.
- A potential useful reference, but not required text for the course is, Biochemistry: The Molecular Basis of Life by McKee and McKee **updated fifth edition or newer**. I have this book on reserve at a couple of the Rutgers libraries if you would like to read a topic from another author's perspective. This book and newer editions have a great review of some relevant gen chem and organic chemistry principle in it too.

Required Videos and/or Website Materials

- All the Canvas video lectures and any suggested videos contained in the course.
(<https://tlt.rutgers.edu/canvas>)

Technology Requirements

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Canvas

Technology skills necessary for this specific course

- Live web conferencing using Zoom, Webex or Canvas for office hours and any required meetings.
- Use of the Respondus Monitor and Lockdown Browser software system. See the first Canvas Module for more details.
- Use of our learning management system, Canvas.

Required Equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with a reliable high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone
- A pair of headphones for listening to videos and office hours
- A non-memory calculator like a TI-30X or equivalent (no graphing/programmable calculators)

Required Software

- Microsoft Word or equivalent
- Microsoft PowerPoint or equivalent
- Google Chrome web browser ONLY for course materials.
- The use of online proctoring tool extensions or other items related to online proctoring.

Assessments and Scheduling

Important Dates (see schedule below assignment deadlines)

Please check the Rutgers registrar's office for details and official dates and times of the course. All exams will be given according to the schedule below.

Course Schedule and Deadlines

Mastering Chemistry Assignments for a specific module and an End of Module Quiz for a specific module will be due at the same date and time and the dates will be posted on Canvas and in the below grid. Mastering Chemistry and End of Module Quizzes are open book/open notes and working ahead is highly advised since no makeup work or extensions will be provided after the due date. Exams are closed book/closed resources. Your lowest Mastering Chemistry grade and End of Module quiz grade will be dropped. There will be an optional cumulative exam offered during finals period that can replace your lowest exam grade. There are no makeup exams offered. **As a student, you should copy these due dates down into your phone's calendar and set reminders and work ahead of the due dates and times.**

| Assignment Summary Table | Due Date and Time |
|---|---|
| <ul style="list-style-type: none"> End of Module 0, 1 & 2 Quizzes Mastering Chemistry HW for module 1 & 2 | 11:00AM EST Thursday, 02/16/23 |
| <ul style="list-style-type: none"> Exam 1 (Covering Modules 1&2) | Thursday, 02/16/23 Online section: all day in Canvas In-person section: 12:10PM in Lecture Hall |
| <ul style="list-style-type: none"> End of Module 3 & 4 Quizzes Mastering Chemistry HW for modules 3 & 4 | 11:00AM EST Monday, 03/27/23 |
| <ul style="list-style-type: none"> Exam 2 (Covering Modules 3&4) | Monday, 03/27/23 Online section: all day in Canvas, In-person section: 12:10PM in Lecture Hall |
| <ul style="list-style-type: none"> End of Module 5 Quiz Mastering Chemistry HW for module 5 | 11:00AM EST Monday, 05/01/23 |
| <ul style="list-style-type: none"> Exam 3 (Covering Module 5) | 05/01/23 Online section: all day in Canvas In-person section: 12:10PM in Lecture Hall |
| Summary Paper for 16:682:531 Basic Biochemistry Only | 11:00AM EST Monday, 04/17/23 |

| Chapter | Module 0 & 1: Introduction and Overview Topics, Readings, Assignments, and Deadlines |
|---------|---|
| 1 | <ul style="list-style-type: none"> • Introduction to Biochemistry |
| 2 | <ul style="list-style-type: none"> • Water and weak interactions |
| 3 | <ul style="list-style-type: none"> • Energy |

| Chapter | Module 2: Proteins and Enzymes Topics, Readings, Assignments, and Deadlines |
|-------------------|---|
| 5 | <ul style="list-style-type: none"> • Primary level of protein structure |
| 6 | <ul style="list-style-type: none"> • 3-D Structure of Proteins |
| <i>Assignment</i> | <ul style="list-style-type: none"> • <i>Enzymology Peer-Reviewed Articles Assigned to Groups and Students Should Start Reading the Article</i> |
| 8 | <ul style="list-style-type: none"> • Enzymes |
| | <ul style="list-style-type: none"> • Exam 1 Modules 1 & 2 |

| Chapter | Module 3: Carbohydrates and Carbohydrate Metabolism Topics, Readings, Assignments, and Deadlines |
|---------|--|
| 9 | <ul style="list-style-type: none">• Carbohydrates |
| 11 | <ul style="list-style-type: none">• Metabolism & Carbohydrate Metabolism |
| 12 | <ul style="list-style-type: none">• Carbohydrate Metabolism• Video to help Learn: Oxidate It or Love It |
| 13 | <ul style="list-style-type: none">• Citric Acid Cycle |
| 14 | <ul style="list-style-type: none">• Electron Transport and Oxidative Phosphorylation |

| Chapter | Module 4: Lipid and Nitrogen Metabolism Topics, Readings, Assignments, and Deadlines |
|---------|--|
| 10 | <ul style="list-style-type: none"> Lipids and Membranes |
| 16 | <ul style="list-style-type: none"> Lipid Metabolism |
| 18 | <ul style="list-style-type: none"> Amino Acid and Nitrogen Metabolism Read Chapter 18.6 (Pathways of Amino Acid Degradation) |
| 19 | <ul style="list-style-type: none"> Nucleotide Metabolism |
| | <ul style="list-style-type: none"> Exam 2 Modules 3 & 4 |

| Chapter | Module 5: Integration of Metabolism and the Central Dogma Topics, Readings, Assignments, and Deadlines |
|---------|---|
| 17 & 20 | <ul style="list-style-type: none"> Integration of Metabolism and Signal Transduction |
| 4 | <ul style="list-style-type: none"> DNA and RNA |
| 22 | <ul style="list-style-type: none"> DNA Replication |
| 24 | <ul style="list-style-type: none"> Transcription and Post-transcriptional Processing |
| 25 | <ul style="list-style-type: none"> Translation and Post-Translational Protein Processing |
| 26 | <ul style="list-style-type: none"> Regulation of Gene Expression |
| | <ul style="list-style-type: none"> Exam 3 Module 5 |

Assignment Summary

Below are the required components of this course and the percentage of each component out of 100. Please refer to the course schedule (below) for specific due dates and in the assignment overview section for details regarding each assignment. There is no curve in the class.

| Graded Assignments For 11:115:301 | Point |
|--|---|
| Mastering Chemistry Assignments (see due dates found on Mastering Chemistry site) | 30 |
| End of Module Quizzes | 20 |
| Exam 1 see details about proctoring under exam 1 on next page | 16.66 |
| Exam 2 see details about proctoring under exam 2 on next page | 16.66 |
| Exam 3 see details about proctoring under exam 3 on next page | 16.67 |
| Optional Cumulative Exam Offered During Finals Period | If higher, would replace exam 1, 2, or 3 |
| Enzymology paper (material on exam 1) | 0 |
| Interest Topic paper (material on exam 2) | 0 |
| Total | 100 |

| Graded Assignments For 16:682:531 | Point |
|--|---|
| Mastering Chemistry Assignments (see due dates found on Mastering Chemistry site) | 25 |
| End of Module Quizzes | 20 |
| Exam 1 | 13.33 |
| Exam 2 | 13.33 |
| Exam 3 | 13.34 |
| Optional Cumulative Exam Offered During Finals Period | If higher, would replace exam 1, 2, or 3 |
| Summary Paper to be assigned (see below for instructions) | 15 |
| Enzymology paper (material on exam 1) | 0 |
| Interest Topic paper (material on exam 2) | 0 |
| Total | 100 |

Scores That Will Be Dropped For 11:115:301 & 16:682:531

- The Lowest End of Module Quiz Will Be Dropped
- The Lowest Mastering Chemistry HW Will Be Dropped
- If An Exam is Missed, It Can Be Replaced By a Cumulative Exam During Final Period

Assignment Overviews

Exam 1

- This exam will contain a total of 43 multiple-choice questions. The exam will be broken into three parts, each having multiple-choice answers. **Part 1** will consist of 30 questions worth 2 points each and should not require much work to arrive at an answer (math, graphing, extrapolation, etc.). **Part 2** will contain 5 questions worth 2 points each from the first paper assigned to you (see Enzymology Paper assignment description below). **Part 3** will have 8 questions worth 3.75 points each and will involve you performing tasks. Both parts will have multiple choice answer selections. You will be given 1 hour to complete the exam. ***If you are in the in-person course, we will intend to have exams during the published lecture time on the Rutgers schedule of classes. If you are in a fully online or hybrid class or we go remote for any reason, exams will be given through Respondus Monitor given during the class meeting time listed above. If a student is taking an online proctored exam, a slow and complete view of the student's desk surface must be provided during the start of the exam and the student's face must remain clearly in view of the camera for the full duration of the exam. A point penalty on the exam may be applied if these rules are not followed.***

Exam 2

- This exam will contain a total of 43 multiple-choice questions. The exam will be broken into three parts, each having multiple-choice answers. **Part 1** will consist of 30 questions worth 2 points each and should not require much work to arrive at an answer (math, graphing, extrapolation, etc.). **Part 2** will contain 5 questions worth 2 points each from the second paper based on the group you joined (see Interest Topic assignment description below). **Part 3** will have 8 questions worth 3.75 points each and will involve you performing tasks. Both parts will have multiple choice answer selections. You will be given 1 hour to complete the exam. ***If you are in the in-person course, we will intend to have exams during the published lecture time on the Rutgers schedule of classes. If you are in a fully online or hybrid class or we go remote for any reason, exams will be given through Respondus Monitor given during the class meeting time listed above. If a student is taking an online proctored exam, a slow and complete view of the student's desk surface must be provided during the start of the exam and the student's face must remain clearly in view of the camera for the full duration of the exam. A point penalty on the exam may be applied if these rules are not followed.***

Exam 3

- This exam will contain a total of 43 multiple-choice questions. The exam will be broken into three parts, each having multiple-choice answers. **Part 1** will consist of 35 questions worth 2 points each and should not require much work to arrive at an answer (math, graphing, extrapolation, etc.). **Part 2** will have 8 questions worth 3.75 points each and will involve you performing tasks. Both parts will have multiple choice answer selections. You will be given 1 hour to complete the exam.. ***If you are in the in-person course, we will intend to have exams during the published lecture time on the Rutgers schedule of classes. If you are in a***

fully online or hybrid class or we go remote for any reason, exams will be given through Respondus Monitor given during the class meeting time listed above. If a student is taking an online proctored exam, a slow and complete view of the student's desk surface must be provided during the start of the exam and the student's face must remain clearly in view of the camera for the full duration of the exam. A point penalty on the exam may be applied if these rules are not followed.

Optional Cumulative Exam

- This optional cumulative exam will cover all material taught and contain a total of 86 multiple-choice questions. The exam will be broken into two parts, each having multiple-choice answers. **Part 1** will consist of 70 questions worth 2 points each and should not require much work to arrive at an answer (math, graphing, extrapolation, etc.). **Part 2** will have 16 questions worth 3.75 points each and will involve you performing tasks. Both parts will have multiple choice answer selections. You will be given 2 hours to complete the exam. This exam will be offered in an online format only with video proctoring. **This exam will be administered online only using Respondus Monitor. The exam window will be for 24hrs on a date specified for final exams asynchronous courses. A student taking this exam is expected to show a slow and complete view of the student's desk surface during the start of the exam and the student's face must remain clearly in view of the camera for the full duration of the exam. A point penalty on the exam may be applied if these rules are not followed.**

Enzymology paper and Interest Topic paper

- The enzymology paper will be assigned to you during module 2 and you will have the option to use the forum posts to collaborate with other students and discuss the paper. Five two point questions regarding the findings, how fundamental principles taught in lecture are applied to this paper, and/or the significance of this paper will appear on exam 1. A set of papers that you will pick from will be provided for Exam 2. Announcements will be made regarding how to do this when the assignment is given.

End of Module Quizzes in Canvas

- There will be a quiz at the end of each module and a link to this quiz will be found in the final lesson page of each module. You can locate these lessons by clicking on the Home button in Canvas, then the proper module and finally the lesson you would like to be in. You are responsible for keeping up with the due dates for these quizzes. There will be a due date for these quizzes and extensions will not be given. These quizzes are open book and open notes.

At Home Reading Assignments from the Textbook and Canvas Pre-recorded Lectures

- You are expected to be reading the sections of the chapters covered during lecture after watching each lecture. This is a part of the expectation of the course. The lecture

will highlight what I feel are important topics in biochemistry and illustrate and/or interpret the material so that it can be comprehended better by a student when they read the textbook later. The reading should further your understanding and allow you to hear the content presented to you by another voice (the author of the book), but also allow you to spend time reflecting on concepts presented in lecture.

Summary Paper (for Basic Biochemistry Only 16:682:531)

- Graduate students will be expected to write a 3-5 page mini-review (single spaced, 12pt Times New Roman font). I'm including 3 papers for you to write a minireview of a topic on. In your syllabus this is entitled "Summary Paper to be assigned". You will find that these papers relate to a molecule called CD44 and I would like you to write a 3-5 page mini-review of the topic with citations. You should use primary sources in your review and may need to go outside of these paper for the purpose of citing further background articles. I would like the review handed-in (uploaded as a PDF in Canvas) by the due date in the syllabus. If you need an idea of what a minireview would look like you can see some here. The paper titles are below and can be looked up through Rutgers libraries and downloaded.

Paper 1

Targeting CD44 by CRISPR-Cas9 in Multi-Drug Resistant Osteosarcoma Cells
Xiao Z.a,b · Wan J.a · Nur A.A.c · Dou P.a · Mankin H.c · Liu T.a,c · Ouyang Z.a
Cell Physiol Biochem 2018;51:1879–1893

Paper 2

CD44 promotes multi-drug resistance by protecting P-glycoprotein from FBXO21-mediated ubiquitination

Abhilash K. Ravindranath,¹ Swayamjot Kaur,¹ Roman P. Wernyj,¹ Muthu N. Kumaran,¹ Karl E. Miletti-Gonzalez,^{1,4} Rigel Chan,¹ Elaine Lim,¹ Kiran Madura,^{1,2} and Lorna Rodriguez-Rodriguez^{1,3} Oncotarget. 2015 Sep 22; 6(28): 26308–26321.
Published online 2015 Jul 3. doi: 10.18632/oncotarget.4763

Paper 3

Doxorubicin induces drug resistance and expression of the novel CD44st via NF-κB in human breast cancer MCF-7 cells XIN JIAN FANG^{1,2}, HUA JIANG², YA QUN ZHU¹, LI YUAN ZHANG¹, QIU HONG FAN¹ and YE TIAN¹ ¹ Department of Radiotherapy and Oncology, The Second Affiliated Hospital of Soochow University, Suzhou, Jiangsu 215004; ² Department of Medical Oncology, The Second People's Hospital of Lianyungang (Lianyungang Hospital Affiliated to Bengbu Medical College), Lianyungang, Jiangsu 222000, P.R. China Received January 17, 2014; Accepted February 24, 2014

Please see your grading scheme above for how much this assignment is weighted in your final grade for the course.

GUIDELINES BASIC BIOCHEMISTRY REVIEW ARTICLE

We are using the JBC guidelines listed below.

The *Journal of Biological Chemistry* (JBC) publishes timely reviews that highlight new insights and paradigm shifts in our **understanding of the molecular and cellular basis of life processes**.

All JBC Reviews should be written for a broad interdisciplinary readership and highlight the opportunities, challenges and wider implications of the work. We welcome a spectrum of reviews that may: critically review and provide new insight into the state of a field; focus on advances in methods, tools, techniques and resources that are of broad interest to the biological chemistry community; and/or address forward looking, multidisciplinary and cross-cutting themes.

The JBC Reviews Committee will work with authors and associate editors during the preparation of reviews to assist in refining the focus and scope by providing feedback on outlines or early drafts to help identify missing elements, comment on figures, and make suggestions on the global organization. JBC will give editorial input on the overall organization and presentation of the first submission. JBC will provide artistic support for critical figures that can be used for educational purposes and capture the central message(s) of the review to create a consistent style for the JBC Reviews section. Please note that this step will only occur once it is clear the review is on track to publication; the initially submitted figures must be sufficiently developed to facilitate the peer review process. [See more information regarding this part of the process.](#)

Additional considerations

- JBC Reviews are normally invited. However, authors may submit brief outlines for consideration by the Committee.
- Where the focus is more on a particular field, authors should discuss open questions, controversies in that field and the broader implications of new findings.
- Discussion of advances in methodologies/tools/resources should articulate opportunities, describe new developments and insights, and provide critical assessment of the benefits and pitfalls of new approaches.
- Works highlighting opportunities that are forward-looking and have a broader and multi-disciplinary approach that provide new insight to multiple themes and fields are particularly welcome.
- Please avoid lengthy details about specific experiments, unless they are directly relevant to the central advances you want to highlight.
- New analysis of publicly available data (such as extracting mutations from gene databases or overlaying biomolecule structures) will be allowed at the editor's discretion; the inclusion of new primary data is not allowed. Unpublished data are not generally allowed.

Formatting guidelines

- Titles should be accessible to a broad readership and not exceed 150 characters (including spaces).

- Abstracts should not exceed 250 words.
- Include a [Conflict of Interest statement](#).
- The overall length is at the author's discretion, pending input from the Committee and referees. JBC welcomes short reviews (comparable to previous JBC Mini-reviews, i.e. 28000 characters) but longer monographs are fine where a more comprehensive approach is justified.
- The figures and tables should illustrate the main points of the Review and/or provide useful resources; authors should generally aim for 6 or fewer images to make optimal use of artistic support. Ideally at least one image summarizing the overall system/process/biomolecule featured in the review will be included to assist interested non-experts.
- The number of references is not restricted. References should be cited by number. Citation of original research for the majority of the references is preferred, although providing a clear statement of the relationship of this review to any previous reviews is recommended.
- For the initial submission, it is not necessary to adopt specific formatting. For subsequent submissions, please refer to the [Instructions for Authors](#) page for guidance on JBC's preferred formatting style (e.g., running title, keywords etc.).
- Supplementary information is not permitted in review articles.

Grading Scale

(Source: Rutgers standard undergraduate grade scale)

| Grade | Range |
|-------|-------------|
| A | 89.01 – 100 |
| B+ | 84.01 – 89 |
| B | 79.01 – 84 |
| C+ | 74.01 – 79 |
| C | 69.01 – 74 |
| D | 59.01 – 69 |
| F | Below 60 |

Student Participation Expectations

By signing up to take this class, you have made a commitment to the class and the schedule of the class. The due dates in the course are a part of that commitment. Work in advance of your due dates and plan around the due dates of the course. Your plan should include contingencies of how you can get your work completed in your first plan fails. For example, do you have a friend or family member's computer that you can access if your computer just stops working? What will you do in case of a power outage? These are important things to consider when pacing with and engaging in this course. Think of these now and make a "worst case scenario" plan involving people you may need to ask a favor of. Your plan could be something like spending an hour in your car at a friend or family members house/driveway to watch a lecture video or going to a local place (library, coffee shop, etc.) that broadcasts WIFI. Please do yourself a favor and look into options for yourself before a situation such as this presents itself and you're not prepared.

There is no grade given for attendance, but attendance and class participation is encouraged. I will make recordings of the lecture material available, however, in class exams may reflect specific material covered during this term's lecture that are not represented in the pre-recorded videos in the course. The following is a summary of everyone's expected participation:

- **Logging in to Canvas and/or Mastering Chemistry:**

Be sure you are logging in to the course in Canvas daily to check the Announcements Tools for any messages from your professor, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) I will be posting communications via the Announcement tool and will be available during our normal scheduled class meeting times for live consultation.

- **Time Commitment**

To be successful in this course, you should plan to dedicate approximately 3hrs outside the class per credit of the class (9hrs for this class). This varies on a per student basis and is no guarantee of success. Study as much as you have to until you know your material (without the use of your notes). Make sure your studies focus on what is covered in the class and how what is taught reinforces. See module 0 in Canvas for tips on how to be successful in this course.

- **Office hours**

They will be held online using Zoom. Please check the Zoom tool on the left-hand side and you will see times posted in there. I will also make cloud recordings available. I will remain in the room for the first 15 minutes, but if nobody does come on a given day after 15 mins of the room being open, I may close the session.

- **Missing an assignment/deadline**

If you miss an exam or assignments for any reason, you will receive no credit (a zero) for that assignment. The lowest Mastering Chemistry Homework Assignment and the lowest End of Module Quiz will be dropped from your final grade for all students. If an exam is missed in the course, you have the option of replacing that zero by taking a cumulative exam during the final period of the course. If you don't complete either, a grade of zero will be recorded for one of your exams.

- **Rescheduling a Due Date for Religious Reasons**

Any and all exam conflicts with observed religious holidays need to be reported at the beginning of the semester and due dates will be adjusted ahead of your religious holiday conflict. You will have 7

days past the add/drop period to contact me so that we can make arrangements for your alternative testing date/time. After 7 days past the add/drop period adjustments will not be offered. All other assignments should be completed ahead of time and are open for students to work on ahead of time. Altering due dates for such assignments for homework or quizzes is not needed.

- **Questions about Homework, Quiz or Exam Items**

- 1) If you wish to challenge a question answer on an assignment or exam, please post this in the appropriate premade Discussion item. In this post you must provide evidence that the question has an incorrect answer. This needs to include all of the following: the assignment name and question number you are referencing; your source (a peer-reviewed text); an explanation as to why your selection is indeed correct; and why your answer is more correct than the answer I selected as correct. All legitimized requests that have substantial preparation supporting your inquiry will be entertained and I will communicate back to you in the Discussion post
- 2) If you wish to challenge a question based on the assumption that this question is not covered in the lectures, or any other course material and I find it in a recording, the textbook or an assignment, I will not credit your exam for that question, but deduct a point from your assignment for my time spent. You are more than welcome to ask me to explain any exam related material during an office hour session.

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Contacting the professor via writing** Please use the Discussion tool in Canvas to ask questions about the class. All content related correspondence for the class will take place there. Please do not email me directly because email isn't my preferred method of large class communication. I will dedicate time to check the Discussion tool daily, but will not be sorting through my daily emails for content questions from the course. If you have a personal issue, please contact a Dean of Students and they can assist you with how to properly notify me and your other professors of your needs. Please see "**Missing an assignment/deadline**" for more details.

Content questions should be posted under the appropriate Discussion heading on Canvas (module 1, module 2, Exam 1, etc.) and someone will respond as soon as possible (usually within 24hrs). You may want to see if someone else has already asked the same question before you post so that you can get your answer as quick as possible. If the answer involves a lot of explanation, I would ask that you come to one of my office hours. I will hold two, weekly office hours at which I will entertain questions. For this semester these will be held virtually.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics. Please also refrain from using all CAPITAL LETTERS, as this is often interpreted as shouting.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. Treat your instructor and fellow students with respect at all times, and in all communications.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)
- **Backing up your work:** I would like each student to compose their academic posts in a word processor, where you can save your work, and then copying into the Canvas discussion. Please keep a copy of this for your records in case it is required later.

Support and Policies


Faculty Feedback and Response Time

Please call the help desk at [877-361-1134](tel:877-361-1134) or email them at help@canvas.rutgers.edu if you have a technical problem with Canvas. If there is a technical problem with Mastering Chemistry, please consult the help feature on the Modified Mastering Chemistry homepage. Consult them as soon as you notice the problem and please post your issue on the Discussion tool in Canvas so you have record of the timing of your report. It would be wise to begin your work days ahead of the deadlines to avoid missing a deadline due to a problem with technology and the helpdesk not being open.

Grading and Feedback

You can generally expect feedback within **7 days** after an assignment is collected.

Academic Integrity




The consequences of scholastic dishonesty are very serious. Please review the [Rutgers' academic integrity policy](#) .

Academic integrity means, among other things:



- Develop and write all of your own assignments.
- Show in detail where the materials you use in your papers come from. Create citations whether you are paraphrasing authors or quoting them directly. Be sure always to show source and page number within the assignment and include a bibliography in the back.
- Do not fabricate information or citations in your work.
- Do not facilitate academic dishonesty for another student by allowing your own work to be submitted by others.



If you are in doubt about any issue related to plagiarism or scholastic dishonesty, please discuss it with your instructor.

Other sources of information to which you can refer include:


- [Rutgers' Academic Integrity website](#) 
- [Code of Student Conduct](#) 
- [Eight Cardinal Rules of Academic Integrity](#) 

Academic Support Services

- Rutgers has a variety of resources for academic support. For more information, check the [Academic Support website](#) .
- Rutgers has Learning Centers on each campus where any student can obtain tutoring and other help. For information, check the [Learning Center website](#) .

- Rutgers also has a Writing Center where students can obtain help with writing skills and assignments. Learn more at the [Writing Center website](#) .
- Many library resources are available online. Assistance is available through phone, email, and chat. For information, check the [Rutgers Libraries website](#) .


Rutgers Health Services

- Rutgers Health Services is dedicated to health for the whole student body, mind and spirit. It accomplishes this through a staff of qualified clinicians and support staff, and delivers services at a number of locations throughout the New Brunswick-Piscataway area. For more information, check the [Rutgers Health Services website](#) .

Accommodations for Accessibility

Requesting accommodations

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, contact your instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, please contact the [Office for Disability Services](#)  to register for services and/or to coordinate any accommodations you might need in your courses at Rutgers.

Go to the [Student section of the Office of Disability Services](#)  website for more information.