RUTGERS

SYLLABI FOR:

11:115:301 INTRODUCTORY BIOCHEMISTRY
&
16:682:531BASIC BIOCHEMISTRY

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 as well as the signaling that controls them. 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. The overall goal is for students to understand that many of these reactions or metabolic pathways relate to each other in the organism.

Instructor

Instructor: Kyle Murphy, Ph.D.

For general course questions, please read this document.

For questions about course registration including, special permission numbers, pre-requisite overrides or waitlist status please email Mrs. Vinasco at jvinasco@sebs.rutgers.edu

For questions regarding biochemistry material or concerns not found in this document, please email Dr. Murphy at kyle.murphy@rutgers.edu

Course Delivery

This course uses Canvas as the learning management system to deliver most course content. To access the course after the first day of classes, please visit https://tlt.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 make arrangements with a friend or family member to safe guard against missing due dates because of a lack of available or availability to resources. If this is something you need assistance with, please approach me during the add/drop period of the course to see if we can resolve the issue. If you are in the online class, your exams will be proctored by 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 and/or a Dean of Students before the end of add/drop. If you are in the in-person or hybrid section, exams will be proctored live by a professor(s) and/or teaching assistant(s) during in-person exam times that will be held during the normal class meeting times published on the Rutgers registration website. https://sis.rutgers.edu/soc/#home

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. Buy codes outside of these two options at your own risk. There are different ways you can purchase the textbook with the Mastering Chemistry code. You can get an etext, 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)

Formats for Different Sections

Check here https://sis.rutgers.edu/soc/#home to see if the section you're interested in is being offered and when.

The table below provides an explanation of the varied formats the course is offered in and how the course runs.

Section Type	Term(s) Potentially Offered	Lecture Material Format	Office Hour Support	Support Provided by Professor	Exam Time & Proctoring
In-person 11:115:301:0X X are numbers 2, 3, 4…n	fall & spring	1:20hr live lectures during scheduled meeting place & times with asynchronous readings and assignments	Live office hour scheduled by professor each term.	After class or during live office hours	Live proctored by professor(s) and/or TA(s) in classroom during class meeting times
Online 11:115:301:90	fall & spring	1:20hr pre-recorded lectures on LMS with asynchronous readings and assignments	Group Webcam office hours scheduled by professor each term	During office hours and asynchronous discussion posts	Webcam and microphone recorded computer proctoring via student's computer
Hybrid 11:115:301:B1 only	summer	Four hours in-person course meetings spread over a 6 weeks period with asynchronous readings and assignments	Live office hour scheduled by professor each term.	After class or during live office hours	Live proctored by professor(s) and/or TA(s) in classroom during class meeting times
Online 11:115:301 BX X are numbers 2, 3, 4…n & all H sections	Summer	1:20hr pre-recorded lectures on LMS with asynchronous readings and assignments	Group Webcam office hours scheduled by professor each term	During office hours and asynchronous discussion posts	Webcam and microphone recorded computer proctoring via student's computer

Requirements

In-person and hybrid sections of course:

- Basic computer and web-browsing skills

- Computer: current Mac (OS X) or PC (Windows 7+) with a reliable internet connection
- Ability to navigate Canvas LMS

Fully online sections of course:

- Basic computer and web-browsing skills
- Ability to navigate Canvas LMS
- Live web conferencing using Zoom, Webex or Canvas for office hours and any required meetings.
- Use of webcam and microphone to facilitate online proctoring system.
- 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
- (highly suggested, but not required) A pair of headphones for listening to videos and office hours
- A non-memory calculator like a TI-30Xiis or equivalent (no graphing calculators)
- Access to Microsoft Word or equivalent
- Access to Microsoft PowerPoint or equivalent
- Google Chrome web browser ONLY for course materials
- The use of online proctoring systems during exams and any requests for student identity verification 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 held and start during class meeting times. Extra credit activities may be given during the class meeting times and there will be no make-up work offered for extra credit.

Course Schedule and Deadlines

Mastering Chemistry Assignments for a specific module and an End of Module Quiz for a specific module will have the same due dates and are paced to be due on the same date as the exams. There are three regular exams in the course and not cumulative final. Mastering Chemistry Assignments and End of Module Quizzes are all open book/open notes and working ahead is highly advised since only Dean of Student approved make-ups will be provided for either of these types of assignments. I do drop the lowest Mastering Chemistry Assignment grade and the lowest End of Module Quiz grade in case you do get sick the days it's due and haven't completed the assignment.

Assignment Summary Table	**Due Date and Time**
• End of Module 0, 1 & 2 Quizzes • Mastering Chemistry HW for module 1 & 2	Due date #1 Provided on the first day of class
• Exam 1 (Covering Modules 1&2)	Due date #1 Provided on the first day of class
• End of Module 3 & 4 Quizzes • Mastering Chemistry HW for modules 3 & 4	Due date #2 Provided on the first day of class
• Exam 2 (Covering Modules 3&4)	Due date #2 Provided on the first day of class
• End of Module 5 Quiz • Mastering Chemistry HW for module 5	Due date #3 Provided on the first day of class
• Exam 3 (Covering Module 5)	Due date #3 Provided on the first day of class
Summary Paper for 16:682:531 Basic Biochemistry Only	Graduate course due date towards end of term.

Chapter	Module 0 & 1: Introduction and Overview Topics, Readings, Assignments, and Deadlines
1	• Introduction to Biochemistry
2	• Water and weak interactions
3	• Energy

Chapter	Module 2: Proteins and Enzymes Topics, Readings, Assignments, and Deadlines
5	• Primary level of protein structure
6	• 3-D Structure of Proteins
Assignment	• *Enzymology Peer-Reviewed Articles Assigned to Groups and Students Should Start Reading the Article*
8	• Enzymes
	• Exam 1 Modules 1 & 2

Chapter	Module 3: Carbohydrates and Carbohydrate Metabolism Topics, Readings, Assignments, and Deadlines
9	• Carbohydrates
11	• Metabolism & Carbohydrate Metabolism
12	• Carbohydrate Metabolism • Oxidate It or Love It
13	• Citric Acid Cycle
14	• Electron Transport and Oxidative Phosphorylation

Chapter	Module 4: Lipid and Nitrogen Metabolism Topics, Readings, Assignments, and Deadlines
10	• Lipids and Membranes
16	• Lipid Metabolism
18	• Amino Acid and Nitrogen Metabolism • Read Chapter 18.6 (Pathways of Amino Acid Degradation)
19	• Nucleotide Metabolism
	• Exam 2 Modules 3 & 4

Chapter	Module 5: Integration of Metabolism and the Central Dogma Topics, Readings, Assignments, and Deadlines
17 & 20	• Integration of Metabolism and Signal Transduction
4	• DNA and RNA
22	• DNA Replication
24	• Transcription and Post-transcriptional Processing
25	• Translation and Post-Translational Protein Processing
26	• Regulation of Gene Expression
	• Exam 3 Module 5

Assignment Summary

The following is an example of a grading scheme that could be used in the course and not does not replace y. The professor reserves the right to change the assignments and/or points associated with them. Details about grade distribution will be published on the course syllabus associated to that particular class section for that term and clearly listed on the Learning Management System.

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	20
Exam 2 see details about proctoring under exam 2 on next page	20
Exam 3 see details about proctoring under exam 3 on next page	10
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	15
Exam 2	15
Exam 3	10
Summary Paper to be assigned (details will be emailed to you)	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**

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. ***Fully online students will be expected to participate in video and audio recorded online proctoring of online exams.***

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. ***Fully online students will be expected to participate in video and audio recorded online proctoring of online exams.***

Exam 3

- This exam will contain a total of 20 multiple-choice questions. The exam will consist of 20 questions worth 5 points each and should not require much work to arrive at an answer (math, graphing, extrapolation, etc.). You will be given 30 minute to complete the exam. ***Fully online students will be expected to participate in video and audio recorded online proctoring of online exams.***

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 lesson 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 (sent to this email address kyle.murphy@rutgers.edu) by the due date in the syllabus. If you need an idea of what a minireview would look like you can see some here.
  http://www.jbc.org/content/by/section/Minireviews
  <https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.jbc.org%2Fcontent%2Fby%2Fsection%2FMinireviews&data=02%7C01%7Caustin.grubb%40marine.rutgers.edu%7C6ea1b9427aea47698ae608d6bd2d427b%7Cb92d2b234d35447093ff69aca6632ffe%7C1%7C0%7C636904399433270120&sdata=QFmDwA7uRL6Y5vBN%2FqnW7bCJFIf7e4P1gRqwbPbCJPY%3D&reserved=0

  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
  https://doi.org/10.1159/000495714 .<https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdoi.org%2F10.1159%2F000495714&data=02%7C01%7Caustin.grubb%40marine.rutgers.edu%7C6ea1b9427aea47698ae608d6bd2d427b%7Cb92d2b234d35447093ff69aca6632ffe%7C1%7C0%7C636904399433280128&sdata=KEzTP%2FoAgn1uWR%2BZ1gK9nX5T08HL9FsBULEyAOCCoX4%3D&reserved=0

  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,1,4Rigel Chan,1 Elaine Lim,1 Kiran Madura,1,2 and Lorna Rodriguez-Rodriguez1,3 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 FANG1,2, 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.

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 are both welcomed and encouraged. I will make recordings of the lecture material available. 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. 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.
- **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.

- **Missing an assignment/deadline**
  If you have missed a Mastering Chemistry Assignment or End of Module Quiz due to and undocumented or non-excused Dean of Students reason, the late policy of 5% deduction increasing every 24 hrs by another 5% will apply. If you miss an exam due to sickness or death in your family that can be documented (doctor's note or undertaker's note/death certificate, I want you to do the following:

1) Make an appointment to speak with a Dean of Students within 48hrs of the event's occurrence. If a medical note says that you are excused from activity for two days, then from the day you are cleared to return, begins your 48hr window to contact a Dean of Students. Failure to do so will result in you not being allowed to make up the work.
2) Immediately after you meet with or contact the Dean of Students, contact me via email using your netid@rutgers.edu email address (NOT THE CANVAS EMAIL TOOL) and include full name of the Dean of Students that you spoke to and precisely which assignment you missed.
3) I will then wait for an email from that Dean of Students indicating that they have received your paperwork and processed it verifying the incident and allowing me to provide you a makeup exam. I will then email you to provide you a makeup exam for a time

that works within my schedule.

- **Rescheduling Due to 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.

- **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 or come to office hours. Please do not email me directly because email isn't my preferred method of large class communication. 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. 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 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 do so in writing so you have record of your report. It would be wise to begin your work ahead of 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.