

GENERAL BIOLOGY II (BIO-1201 & BIO-1201L) SYLLABUS

	<p>NEW YORK CITY COLLEGE OF TECHNOLOGY The City University of New York</p>	<p>School of Arts and Sciences Department of Biological Sciences</p>
Course Information		
Course Title	General Biology II (Lecture and Laboratory)	
Course Code	BIO-1201 and BIO-1201L	
Credit Hours	4 credit hours	2.5 hours lecture & 2.5 hours lab per week for 15 weeks
Prerequisite	General Biology I (BIO-1101)	
Text	Lecture	<ul style="list-style-type: none"> • <i>Biology</i> by Mader & Windelspecht, 12th Ed., McGraw-Hill ISBN: NYCCT half volume: 1259710572 or ISBN: Full eTextbook for two semesters: 1259299813 (all available as eBooks) • Free online textbook: https://openstax.org/details/biology
	Lab	<ul style="list-style-type: none"> • “General Biology II Laboratory Manual” (customized) by T. Voza & M. Montes-Matias, McGraw-Hill Publishers. ISBN: 9781121957886 • eBook available at http://create.mcgraw-hill.com/shop/
Materials	Lab coat, disposable gloves, dissecting kit (can purchase from bookstore)	
Course Description	This is a continuation of the General Biology I (BIO-1101) course, focusing on the basic description of living organisms ranging from prokaryotes to higher eukaryotes. Additional topics include animal organization and a description of their main organ systems, with particular attention to how such systems work in humans.	
Grading Procedure (See ‘Grading Policies’ for Details)		
Lecture: 60%	Lab: 40%	
The lecture component includes <u>at least 4 exams</u> plus other assignments at the discretion of the instructor. The lab component includes <u>at least 5 quizzes</u> and 2 practicums (midterm and final).		
Course Coordinator (This is *NOT* Your Professor)		
Dr. Tatiana Voza		
(718) 260-5969; TVoza@citytech.cuny.edu		

Your General Biology II Professor		
Lecture	Name: Dr. Mercer R. Brugler	
	Email: mbrugler@citytech.cuny.edu	Phone: (718) 260-5986
Walk-In Office Hours	Monday & Wednesday 8:45-9:45A (or by appointment at all other times)	
	Room: P-313 (P=Pearl)	Alt Phone: (212) 769-5503

Grading Policies

Student performance in this course will be evaluated as follows:

Lecture: 60% of final grade (based on at least 4 exams)

Lab: 40% of final grade (based on at least 5 quizzes* [50%], a uniform midterm practical [25%], and a final practical exam [25%]) *If assigned, homework assignments will count as extra credit (+5% max)

ASSIGNMENTS		POINTS	NOTE	
Lab Quizzes	There are 9 quizzes, which will account for 50% of the final lab grade	Quiz 1	2.22%	Letter grades will be determined using a standard percentage point evaluation as outlined below: A 93-100 A- 90-92.9 B+ 87-89.9 B 83-86.9 B- 80-82.9 C+ 77-79.9 C 70-76.9 D 60-69.9 F Below 60
		Quiz 2	2.22%	
		Quiz 3	2.22%	
		Quiz 4	2.22%	
		Quiz 5	2.22%	
		Quiz 6	2.22%	
		Quiz 7	2.22%	
		Quiz 8	2.23%	
		Quiz 9	2.23%	
	The two practical exams will be 50% of the final lab grade	Midterm 10%		
	Final 10%			
 Total 20%			
Lecture Exams	Lecture Exam 1	15%	Percentage Category:	
	Lecture Exam 2	15%	Lecture Exams	60%
	Lecture Exam 3	15%	Lab Quizzes	20%
	Lecture Exam 4	15%	Practicums	20%
	Total	100%		

Attendance and Lateness (see Addendum on Page 10)

You must attend both lecture and lab. **ABSENCES IN EXCESS OF 10% OF THE TOTAL LECTURE OR LAB HOURS WILL RESULT IN YOU BEING DROPPED FROM THE COURSE WITH A FAILING GRADE (=WU, UNOFFICIAL WITHDRAWAL).** This means that no more than 3 lecture or 2 lab absences will be tolerated. It is expected that you will be in your seat and ready to work at the start of each period and that you will not leave the lecture/lab early. Any 2 latenesses will be considered equal to 1 absence. **Attendance will be taken at the beginning of every class (lecture = 10:00A sharp; lab = 8:30A sharp).** If you are late, it is your responsibility to notify the instructor *at the end of class*. It is also your responsibility to keep track of how many lates and absences you have accumulated. Please email your professor (mbrugler@citytech.cuny.edu) if you are unsure of your total number of absences. ***If you do not bring your lab coat to the laboratory, you will not be allowed to take the quiz or participate in the lab exercises; you will be counted as absent.*** Students should always wait outside of the lab until the instructor arrives.

Lecture Exams

Lecture exams will be at least one hour long and consist of at least 50 questions (multiple choice and true/false). If you are late to a lecture exam, you will be able to pick up an exam up until the time when the first student hands in his/her exam. After that point, exams will no longer be administered. Please bring at least one #2 pencil and an eraser to each exam. You cannot use a pen to fill in bubbles on a scantron. Your professor will provide you with a scantron. Scantrons will be collected at 11:15A. You will not be allowed to bubble in answers after time is called (i.e., make sure you have indicated all of your answers on the scantron by 11:15A). If you wear a baseball cap to the exam, you must rotate your cap so the brim faces backwards (so the professor can see your eyes). You must remove and store any ear buds, headphones, and sunglasses, and put away calculators and cell phones. All grades are counted; none are dropped nor are they curved.

Make-Up Exams

The biology department has a no make-up policy. Thus, make-up exams are a rare and exceptional occurrence. Make-up exams are given at the discretion of the instructor. You must contact the instructor ahead of the exam you will miss to determine your eligibility for a make-up exam, and, if eligible, schedule your make-up exam and discuss the format (essay). You must provide written proof of reason for your absence (i.e., acceptable documentation). If you did not contact your instructor ahead of a missed exam, you will not be allowed to take a make-up exam.

Bonus Point Quizzes (Lecture Only)

Bonus point quizzes (BPQs) may be administered between lecture exams. BPQs can be administered at any time during class. Since BPQs only help your grade (i.e., all bonus points earned are added to your lecture exam), make-up BPQs are not allowed. Please bring a clean piece of standard-sized paper and a writing utensil to every class. Also, make sure that your name is on your paper. As a departmental rule, bonus points cannot make up more than 5% of a given grade.

Course Description

BIO-1201 is the second half of first year General Biology for non-science majors at New York City College of Technology. This course introduces students to a variety of biological topics fundamental to all living organisms, with a focus on human biology. In particular, the course is a survey of organisms belonging to the Domains Archaea and Bacteria and, more extensively, the organisms spanning the four kingdoms of the Domain Eukarya. A special focus will be dedicated to higher animal organization, ranging from animal tissues to organs and organ systems, and how these compare in invertebrates versus higher vertebrates such as humans.

General Biology II (BIO-1201) Learning Outcomes

Upon satisfactory completion of this course, students will be able to:

- I. Discuss the contribution of disciplines such as Systematics and Taxonomy to the organization of living organisms. Provide criteria for classifications and naming. Explain how organisms are evolutionarily related.
- II. Identify Prokaryotic organisms and distinguish them from Eukaryotes depending on their cellular characteristics. Provide examples of organisms belonging to the domain Bacteria and the domain Archaea. Elaborate on the contribution of bacterial infections to the development of diseases in modern society. Explain the differences between Prokaryotes and Viruses and how viruses can be categorized as living organisms.
- III. List and explain the characteristics of the kingdom Protista and of the variety of organisms belonging to it. Provide examples of various kinds of protists and how they differ from each other in cell composition, organization and general behavior. Compare the relationships of protists with other organisms, including examples of parasitic and, generally, disease-causing organisms.
- IV. List and explain the characteristics of the kingdom Fungi and of the organisms belonging to it. Distinguish between zygosporangium, ascospore and basidiospore fungi. Provide examples of the different kinds of fungi, their habitats and their survival skills.
- V. List and explain the characteristics of the kingdom Plantae and of the organisms belonging to it. Explain the concept of 'alternation of generations' and the main differences between gametophyte and sporophyte individuals. Provide classification criteria to distinguish between different kinds of plants. Describe the differences between various plant tissues and their purpose within the plant. Analyze the main kinds of plant organs (roots, stems and leaves) and their contribution to the life cycle of plants. Describe the main steps in a plant's reproductive cycle, and the importance of the flower as the main reproductive organ in angiosperms. Distinguish between micro- and macronutrients and their importance within the life of any plant.
- VI. List and explain the characteristics of the kingdom Animalia and of the organisms belonging to it. List the various criteria used for animal classification, ranging from the type of symmetry to the presence or absence of an internal body cavity. Distinguish between invertebrates and chordates vertebrates.

- VII. Describe the four main kinds of animal tissues along with examples of where they can be found in humans and the purpose they may serve. Explain the purpose of having tissues organized into organs and organs into organ systems within the human body. Present the concept of homeostasis, along with examples of how it may function in humans.
- VIII. Describe vital processes including hemolymph/blood circulation, immunity, gas exchange, food digestion and nutrient absorption, body fluid regulation, control of nervous impulses and reproduction and establish a comparison of how they are carried over in invertebrates versus vertebrates and, particularly, humans.
- IX. Dissect and identify the main organs in a fetal pig model. List the components of each main organ system in the provided animal model, and compare them with their counterparts in humans. Dissect and identify the main components of a sheep's brain, and compare them with the corresponding structures in a human brain model.

City Tech General Education Common Core Learning Outcomes

Upon satisfactory completion of this course, students will be able to:

1. Use biology as a forum for the study of values, ethical principles, and the physical world.
2. Show curiosity and the desire to learn.
3. Engage in an in-depth, focused, and sustained program of study.
4. Employ scientific reasoning and logical thinking.
5. Derive meaning from experience, as well as gather information from observation.
6. Understand and employ both quantitative and qualitative analysis to describe and solve problems, both independently and cooperatively.
7. Understand and navigate systems.
8. Communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means.
9. Value knowledge and learning.
10. Demonstrate intellectual honesty and personal responsibility.

CUNY Pathways Common Core Learning Outcomes

Upon satisfactory completion of this course, students will be able to:

1. Identify and apply the fundamental concepts and methods of life science.
2. Apply the scientific method to explore natural phenomena, including hypothesis development, observation and data presentation.
3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
4. Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
5. Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

Lecture Schedule - Section D965, Mon & Wed, 10:00-11:15A, N-1022B

Pages are indicated for the 11th & 12th edition of *Biology* by Mader & Windelspecht (McGraw-Hill)

Dates	Topics/Exams	Pages
01/30 02/01	Classification of Living Organisms <ul style="list-style-type: none"> • Taxonomy: classification and naming of living organisms • Systematic and evolutionary relationships between organisms • Classification systems: Domains and Kingdoms 	Chap. 19 347-361 (11) 337-351 (12)
02/06 02/08	Viruses, Bacteria and Archaea <ul style="list-style-type: none"> ▪ The Viruses: viral structure, viral reproduction, viral infections ▪ The Domain Bacteria: structure, reproduction, nutrition ▪ The Domain Archaea: structure and function, types of archaea 	Chap. 20 362-382 (11) 352-372 (12)
02/15 02/22	The Protists <ul style="list-style-type: none"> ▪ Ecological importance ▪ The algae: green, red, brown, diatoms ▪ Euglenoids ▪ The Protozoa (Zooflagellates, Amoebas and Ciliates) ▪ Slime & Water Molds 	Chap. 21 383-402 (11) 373-394 (12)
02/27	EXAM 1 (Classification, Viruses, Bacteria, Archaea and Protists)	
03/01 03/06	The Fungi <ul style="list-style-type: none"> ▪ Characteristics and structure of Fungi ▪ Reproduction of Fungi ▪ Classification of Fungi: Zygomycota, Ascomycota, Basidiomycota, Chytridiomycota and AM Fungi ▪ Symbiotic Relationships of Fungi: lichens, mycorrhizae 	Chap. 22 403-417 (11) 395-409 (12)
03/08 03/13	Evolution and Diversity of Plants <ul style="list-style-type: none"> ▪ Characteristics of plants and Alternation of Generations ▪ Vascular and non-vascular plants ▪ Plants with and without seeds ▪ Gymnosperms and Angiosperms ▪ Plant organs: roots, stems, leaves and adaptations ▪ Monocot and eudicot plants ▪ Plant tissues: epidermal tissue, ground tissue, vascular tissue 	Chap. 23 418-442 (11) 410-434 (12) Chap. 24 443-463 (11) 435-455 (12)
03/15 03/20	Nutrition, Transport and Reproduction in Flowering Plants <ul style="list-style-type: none"> ▪ Essential inorganic nutrients (macro- and micronutrients) ▪ Soil: soil formation, nutritional function of soil, soil particles, soil erosion ▪ Water and mineral uptake ▪ Plant reproductive strategies ▪ Seed development; fruit types and seed dispersal 	Chap. 25 464-482 (11) 456-475 (12) Chap. 27 501-517 (11) 495-511 (12)
03/22	EXAM 2 (Fungi and Plants: Evolution, Diversity, Nutrition, Transport and Reproduction)	
03/27 03/29	The Kingdom Animalia: Invertebrates and Vertebrate Chordates <ul style="list-style-type: none"> ▪ Introduction to invertebrates: level of organization, type of symmetry, type of coelom, segmentation, embryology, and multicellularity ▪ Protostomes: Molluscs, Annelids, and Arthropods ▪ Deuterostomes: Echinoderms and Chordates 	Chap. 28 518-548 (11) 512-543 (12) Chap. 29 549-551 (11) 545-547 (12)
04/03 04/05	Animal Organization and Homeostasis <ul style="list-style-type: none"> ▪ Types of tissue: epithelial, connective, muscular, and nervous ▪ Organs and organ systems ▪ Homeostasis: negative and positive feedback 	Chap. 31 586-604 (11) 580-599 (12)

04/19 *04/20*	Circulation <ul style="list-style-type: none"> ▪ Circulation in invertebrates ▪ Circulation in vertebrates ▪ Blood as a transport medium 	Chap. 32 605-625 (11) 600-620 (12)
04/24 04/26	Lymph Transport and Immunity <ul style="list-style-type: none"> ▪ The lymphatic system ▪ The immune system: specific and non-specific defenses ▪ Antibodies and types of immunity 	Chap. 33 626-645 (11) 621-640 (12)
05/01	EXAM 3 (Kingdom Animalia: Organization, Homeostasis, Circulation & Lymphatic System)	
05/03 05/08	Digestion and Nutrition <ul style="list-style-type: none"> ▪ Digestive tracts: incomplete and complete; continuous and discontinuous ▪ Adaptation to diet ▪ Human digestive tract 	Chap. 34 646-662 (11) 641-658 (12)
05/10	Respiration <ul style="list-style-type: none"> ▪ Gas exchange ▪ Water and land environments ▪ Human respiratory system 	Chap. 35 663-679 (11) 659-676 (12)
05/15	Body Fluid Regulation and Excretion <ul style="list-style-type: none"> ▪ Aquatic animals and terrestrial animals ▪ Waste products: ammonia, urea, uric acid ▪ Organs of excretion ▪ Human urinary system 	Chap. 36 680-692 (11) 677-690 (12)
05/17	Nervous System and Sense Organs <ul style="list-style-type: none"> ▪ Invertebrate nervous organization ▪ Vertebrate nervous organization ▪ Human nervous system: central and peripheral, somatic and autonomic ▪ Chemical senses: taste and smell ▪ Sense of vision 	Chap. 37 693-715 (11) 691-713 (12)
05/22	Reproduction <ul style="list-style-type: none"> ▪ Asexual and sexual reproduction ▪ Male and female reproductive systems ▪ Hormones of the reproductive system 	Chap. 41 772-794 (11) 770-792 (12)
05/24	EXAM 4 (Digestion, Nutrition, Respiration, Excretion, Nervous System & Reproduction)	

Academic Integrity Policy

“Academic dishonesty includes any act that is designed to obtain fraudulently, either for oneself or for someone else, academic credit, grades, or any other form of recognition that was not properly earned. Academic dishonesty encompasses the following:

Cheating: Defined as intentionally giving, receiving, using or attempting to use unauthorized materials, information, notes, study aids, including any form of unauthorized communication, in any academic exercise. It is the student’s responsibility to consult with instructors to determine whether or not a study aid or device may be used.

Plagiarism: Plagiarism is intentionally and knowingly presenting the ideas or works of another as one’s own original idea or works in any academic exercise without proper acknowledgement of the source. The purchase and submission of a term paper, essay, or other written assignment to fulfill the requirements of a course violates section 213-b of the State Education Law. This also applies to the submission of all or substantial portions of the same academic work previously submitted by the student or any other individual for credit at another institution, or in more than one course.

All required assignments in this course will be checked for plagiarism using TurnItIn

Laboratory Schedule - Section D981, Thursday, 8:30-11:00A, P-403

Pages are indicated for the "General Biology II Laboratory Manual" (customized) by T. Voza & M. Montes-Matias (McGraw-Hill Publishers)

Dates	Topics	Pages
02/02	Taxonomy: Classification and Naming of Living Organisms <ul style="list-style-type: none"> ▪ List the taxonomic levels from the broadest to the most specific. ▪ Explain the degree of similarity and difference between organisms classified in a taxonomic table. ▪ Identify animals and plants through the use of a dichotomous key. ▪ If time and resources allow, <i>SimBio Virtual Lab: "Flowers & Trees"</i> 	2-14
02/09 Quiz 1	Domain Bacteria and Domain Archaea, Kingdom Protista <ul style="list-style-type: none"> ▪ Describe the distinguishing features of members of the Domain Bacteria. ▪ Describe differences between bacteria and cyanobacteria. ▪ Discuss the distinctive features of each group of algae and protozoans. ▪ List examples, habitats, reproductive methods, and unique features of representative members of the Kingdom Protista. 	15-32
02/16 Quiz 2	Kingdom Fungi <ul style="list-style-type: none"> ▪ Describe the characteristic features of Kingdom Fungi. ▪ Explain the division names: Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota and AM Fungi. ▪ Discuss variations in structure and the sequence of events for sexual reproduction for the three major divisions of the Kingdom Fungi. 	33-45
02/23 Quiz 3	Kingdom Plantae I - Bryophytes, Ferns & Gymnosperms <ul style="list-style-type: none"> ▪ Describe the process of alternation of generations. ▪ Explain the criteria for plants classification: conducting tissue, seeds and flowers and distinctive evolutionary features. ▪ Discuss similarities and differences between ferns and bryophytes. ▪ Describe the life cycles of ferns and their allies. ▪ Describe the life cycle of a pine tree (gymnosperm). 	47-57
03/02 Quiz 4	Kingdom Plantae II - Angiosperms: Plant Form & Function <ul style="list-style-type: none"> ▪ Describe the life cycle of flowering plants (angiosperms). ▪ List and give the functions of the principal parts of a flower. ▪ Describe the structure and function of roots, stems, and leaves. ▪ Observe and explain characteristics of fresh monocot and eudicot sprouts 	58-79
03/09 Quiz 5	Kingdom Animalia I - Lower Invertebrates <ul style="list-style-type: none"> ▪ Explain and discuss animal classification (levels of organization, body symmetry, coelom, protostomes, deuterostomes) ▪ Describe the distinguishing features of members of the phylum Porifera and the phylum Cnidaria. Describe the body forms of cnidarians. Compare the feeding methods of sponges and jellyfish. Observe the feeding behavior of live <i>Hydra</i> capturing live water fleas (<i>Daphnia</i>; crustaceans). ▪ Describe the general morphology of flatworms (phylum Platyhelminthes). Observe the morphology and behavior of live <i>Planaria</i>. 	81-95
03/16 Quiz 6	Kingdom Animalia II - Lower Invertebrates (continued) <ul style="list-style-type: none"> ▪ Describe the general morphology, major classes and advanced characteristics of roundworms (phylum Nematoda) and rotifers (phylum Rotifera). Observe the behavior of live rotifers. ▪ Describe the general morphology of organisms of phylum Annelida and phylum Mollusca. Dissect preserved earthworms and bivalves (clams). ▪ List the characteristics and major classes of the phyla Annelida, Mollusca, Platyhelminthes and Nematoda. 	95-112

<p>03/23 Quiz 7</p>	<p>Kingdom Animalia III - Arthropods and Chordates</p> <ul style="list-style-type: none"> ▪ Describe the general morphology, characteristics and major classes of phylum Arthropoda. ▪ Describe modifications of the exoskeleton and paired appendages of arthropods. ▪ Observe preserved insect specimens (grasshoppers) ▪ Describe the morphology and characteristics of the phylum Echinodermata. Dissect preserved sea stars (if available). ▪ Describe the morphology and characteristics of the phylum Chordata. Dissect preserved frogs. ▪ Discuss embryological characteristics that distinguish protostomes from deuterostomes. 	<p>113-142</p>
<p>03/30* Quiz 8</p>	<p>Vertebrate Organization - Tissues and Organs</p> <ul style="list-style-type: none"> ▪ Describe the general properties of tissues versus single cells. ▪ Describe the characteristics of epithelial, connective, muscular and nervous tissues. ▪ Describe the organization of the skin as an organ made up of several tissues working together. <p>*Lab will start with a ~30 minute uniform midterm practical exam</p>	<p>143-158</p>
<p>04/06</p>	<p>Vertebrate Anatomy I - Real & Virtual Fetal Pig Dissection</p> <ul style="list-style-type: none"> ▪ Understand the classification of the pig as a mammal; name the unique mammalian characteristics represented by the fetal pig. ▪ Define all the anatomical terminology, planes and structures. ▪ Dissect and identify the components of the digestive system and respiratory system of the fetal pig. 	<p>159-170</p>
<p>04/27</p>	<p>Vertebrate Anatomy II - Real & Virtual Fetal Pig Urogenital System</p> <ul style="list-style-type: none"> ▪ Determine the sex of your pig. ▪ Define, identify, & describe components of the male and female urogenital system of the fetal pig. ▪ Dissect and identify the heart of the fetal pig along with the main blood vessels (aorta, vena cava). 	<p>170-174 214-217</p>
<p>05/04</p>	<p>Vertebrate Anatomy III - Organs of Homeostasis</p> <ul style="list-style-type: none"> ▪ Define homeostasis and why it is an important characteristic of every life form. ▪ Describe the structure and function of the human lungs, liver and kidneys and their role in the maintenance of homeostasis. ▪ Describe the process of urine formation in the human kidney. ▪ Explain and discuss negative and positive feedback mechanisms. 	<p>175-192</p>
<p>05/11 Quiz 9</p>	<p>The Nervous System - Sheep Brain - Sensory Organs - Action Potential</p> <ul style="list-style-type: none"> ▪ Define and describe the components of the central & peripheral nervous systems. ▪ Dissect and identify the components of the sheep brain and their human counterparts on the models available; provide a function for each component. ▪ Describe the structure of the spinal cord and the mechanism underlying reflexes. ▪ Describe the structure of the human ear and eye and the functions associated with their components. ▪ If time and resources allow, <i>SimBio Virtual Lab: "Action Potentials Explored"</i> 	<p>193-211</p>
<p>05/18</p>	<p>Reproduction, Embryological Development, & Practice Lab Practical</p> <ul style="list-style-type: none"> ▪ Human male and female reproductive systems and cycles. ▪ Describe the main steps in the embryological development of vertebrates. ▪ Identify the various stages in the developmental models provided. 	<p>213-228</p>
<p>05/25</p>	<p style="text-align: center;">Final Practical Exam: Fetal Pig / Sheep Brain Dissection[^] [^]Includes labeling a neuron, vertebral x-section, & human eye, ear and brain</p>	

Lab Quizzes

Lab quizzes will be administered at the beginning of class (8:30A sharp). Lab quizzes will be 10-30 minutes long and consist of multiple choice, true/false, short answer, and/or labeling questions. If you arrive late and the last quiz has already been collected, you will receive a zero for that quiz. If you do not bring your lab coat to the laboratory, you will not be allowed to take the quiz.

Email Correspondence

Legally, your instructor can only communicate with you through your CityTech email account. If you contact your instructor using a non-CityTech email account (Gmail, Yahoo, AOL, Hotmail, etc.), you will not receive a response. It is your responsibility to maintain a functioning CityTech email account, and to check your CityTech email account - and Blackboard - daily for class-related correspondence. You will be held responsible for all correspondence that is sent to your CityTech email account and/or posted on Blackboard.

How to Calculate an Average

Add up all the numbers, then divide by how many numbers there are. In other words, it's the sum divided by the count. For example, let's find the mean of the following three lecture exam scores:

54%, 73%, and 81%

$$54 + 73 + 81 = 208 / 3 = 69.33 = 69.33\%$$

What if you made a 95% on the fourth exam?

$$54 + 73 + 81 + 95 = 303 / 4 = 75.75 = 75.75\%$$

How to Calculate Your Grade Using Weighted Averages

Lecture is worth 60% of your grade and lab is worth 40%. Thus, if you have an 82% average in lecture and a 94% average in lab, here is how to calculate your grade (=86.8%):

$$\text{Lecture: } 82 \times 0.60 = 49.2 \text{ points}$$

$$\text{Lab: } 94 \times 0.40 = 37.6 \text{ points}$$

$$49.2 \text{ points} + 37.6 \text{ points} = 86.8 \text{ points} = 86.8\%$$

Attendance Policy Addendum

If you plan to miss any classes for religious observance, please let your professor know the dates of those absences by the second class meeting (Lecture: 02/01; Lab: 02/09). Your professor will not penalize you for these absences, but may require you to submit any homework and/or take any quizzes in advance.