

**BMS 300 - Principles of Human Physiology**  
**Spring 2019**

**4 credits, traditional grading**

Coordinator and Lecturer:

Dr. John Walrond, 235 Physiology, 970-491-5588, [John.Walrond@colostate.edu](mailto:John.Walrond@colostate.edu)

Office hours: By appointment.

Additional Lecturer:

Dr. Gerrit Bouma, Anatomy/Zoology E306, [gerrit.bouma@colostate.edu](mailto:gerrit.bouma@colostate.edu)

Office Hours: By appointment

**Course Objectives:** This course is designed to provide a general introduction to human physiology.

**Prerequisites:** A college level course in both biology and chemistry. The lectures are prepared with the assumption that the students have these prerequisites and individuals without them will likely experience difficulties in this class.

**Syllabus:** The schedule of lectures and exams is listed in the syllabus. The schedule of lectures, learning objectives, appropriate reading assignments, and sample test questions are available on Canvas.

**Optional Textbook:** *Vander's Human Physiology, The Mechanisms of Body Function*, Thirteenth edition by Eric P. Widmaier, Hershel, Raff, and Kevin T. Strang. Out of print editions may also be used.

**Required Access Card:** An access card must be purchased for the required e-book on Webcom. The e-book contains the course objectives, notes, and links from the objectives to figures and accompanying narratives designed to accompany, explain, and extend material presented in lecture. The access card can be purchased with a credit or debit card from <http://www.grtep.com> by clicking on the icon that reads "Purchase an access card now." The access card can also be purchased from the CSU bookstore, but it may be more expensive. The e-book is also required for access to weekly quizzes (see Homework, below). If you are retaking the course, please contact the course coordinator for instructions on how to renew your access code free of charge.

**Homework:** Prior to each week's lectures an online, multiple choice quiz will be posted in the e-book on Webcom. **Each weekly quiz will be open from 1pm on Thursday to 10am on Monday, Mountain Time.** The quiz questions are intended to acquaint students with upcoming lecture material and are designed to familiarize students with information in the notes and objectives before lecture. Each five-question quiz is worth a maximum of 1.0 point with each question worth 0.2 points. A maximum of 12 participation points will be added to the total number of points scored on the unit exams and final.

**Schedule of e-book Quizzes**

<b>Quiz:</b>	<b>Topics:</b>	<b>Date open</b>	<b>Date Close</b>
<a href="#">Quiz 1</a>	cells, tissues	Jan. 24	Jan. 28
<a href="#">Quiz 2</a>	skin, skeletal system, endocrine system	Jan. 31	Feb. 4
<a href="#">Quiz 3</a>	endocrine system	Feb. 7	Feb. 11
<a href="#">Quiz 4</a>	cellular neurobiology and neuroanatomy PNS and CNS, ascending paths	Feb. 14	Feb. 18
<a href="#">Quiz 5</a>	descending pathways, autonomics	Feb. 21	Feb. 25
<a href="#">Quiz 6</a>	muscle system, motor units	Feb. 28	March 4
<a href="#">Quiz 7</a>	cardiac muscle, vasculature	March 7	March 11
<a href="#">Quiz 8</a>	heart anatomy, electrical systems of heart	March 14	March 25
<a href="#">Quiz 9</a>	blood, lymphatics, nonspecific immunity, humoral immunity, cellular immunity	March 28	April 1
<a href="#">Quiz 10</a>	respiratory anatomy, ventilation, gas exchange	April 4	April 8
<a href="#">Quiz 11</a>	renal system, nephron and collecting duct, mouth to stomach, stomach	April 11	April 15
<a href="#">Quiz 12</a>	digestion, small intestine, liver and metabolism	April 18	April 22
<a href="#">Quiz 13</a>	reproduction, sexual differentiation, anatomy	April 25	April 29
<a href="#">Quiz 14</a>	reproduction, fertilization, hormones, fetal development	May 2	May 6

**Canvas:** Access to Canvas is essential for this course. <http://info.canvas.colostate.edu/login.aspx>. Students are encouraged to use their class notes in conjunction with material provided in Canvas, the textbook, and the e-book. Becoming fluent with the objectives provides the key to success in BMS 300. Students who can discuss each of the objectives without reference to the class notes or the e-book are generally well prepared for the exam. Mastery of the concepts requires mastery of the objectives, which means an ability to verbalize or write the answers to the objectives without reference to the notes or to the textbook. Many students find it advantageous to rewrite their class notes using the streaming videos posted online. Practice is an important part of learning the concepts presented in this course and writing complete and carefully prepared responses has proven invaluable to many students. The learning objectives are intended to guide students through concepts essential for the course. Typically, students should spend at least two hours studying for each hour in lecture.

**GTA Info:** There are several GTAs associated with BMS 300. Click on the “GTA Info” link to learn more about them. Feel free to contact Dr. Walrond or the GTAs with any questions or concerns. Dr. Walrond may be reached via email or phone. Please contact the GTAs via e-mail at [csubms300@gmail.com](mailto:csubms300@gmail.com) and NOT through canvas.

**Lecture Videos:** On-campus lectures will be video recorded and posted as a YouTube link on Canvas in the afternoon. Click on the “Lecture Videos” link to access them. Lectures may be viewed on desktop or laptop computers, or on mobile devices such as tablets or smart phones. The streaming rate will automatically match the capacity of your device and bandwidth availability. Alternatively, you click on the HD box in the bottom right, and manually choose low (360), medium (720) and high resolution (1080).

**After Lecture Quizzes:** Brief multiple-choice quizzes will be posted on Canvas daily. These quizzes are designed to give you a starting place with your studying through helping you identify the most important concepts of lectures. You can earn up to 8 points of extra credit through the completion of these quizzes and will be given based on the percentage correct. **Quizzes will open at 3pm MT on the day of the corresponding lecture and close at 11.59pm MT the next day.**

**Tutorials:** The “Tutorials” link contains a calendar of events and instructions on how to use Zoom to access the online tutorials. **Please note the calendar includes both on-campus and online tutorials and only those listed as ONLINE will be accessible by Zoom.** The tutorials are run by undergraduate student volunteers who have excelled in BMS 300 in previous semesters. We have found student discussion is extremely helpful in guiding students in techniques for mastering the material in BMS 300. Verbalizing the material presented in class has proven to be one of the best ways to absorb and retain physiological concepts key to BMS 300. **Attendance at these online sessions will be recorded, and students who have attended at least 10 weekly sessions during the semester will have 5 points added to their final score in BMS 300. Only one session per week will be counted toward the total.** It is important that the students joining the tutorials online use a login name in the form of their **lastname.firstname** every time they attend those.

**Examinations:** The “Exam Info” link is where you will access your exams, as well as the practice exams that we will post approximately one week before each exam date. The examination schedule is listed at the end of the syllabus. **UNIT Exams must be taken after the exam opens on Wednesday at 5pm MT and before it closes at 6pm MT on Saturday.** For example, the exam scheduled for Wednesday, February 20 can be taken between 5:00 pm Wednesday, February 20 and 6:00 pm Mountain Time on Saturday, February 23. All examinations will be 32 multiple choice questions, each worth 2.5 points for a total of 80 points. Three questions will be fill in the blank questions, with each blank worth one point. Because there will be more than 20 blanks, scores higher than 100 are possible. Unit exam scores will be recorded in canvas for each exam as points (not percentages). The general topics covered by each unit examination are also noted on the syllabus, and typically there will be 3 or 4 questions per lecture. The final examination will be a comprehensive multiple-choice exam of 80 questions, each worth 1.25 points. You must take the final examination to complete the course and the final examination will be used in computing your course grade. **The Final exam will open at 6:30 pm on Monday, May 13th, and close at 6:00 pm Mountain Time on Thursday, May 17th.**

**Proctoring Exams:** The four unit exams and the final will be administered through Canvas. Each student must make arrangements to have each exam proctored by the internet proctoring service, ProctorU. The cost for the proctoring service is included in the course tuition and fees. Go to <http://proctoru.com> to register and generate a username and password. Exams proctored by ProctorU require a webcam and microphone. The service is available seven days a week between 9 am and midnight MT.

Each student must schedule an exam with ProctorU at least four days prior to taking the exam to avoid a penalty charge. To schedule your exam, login to ProctorU and choose your date and time. You must receive a confirmation from ProctorU, otherwise the exam is NOT scheduled. At your scheduled time, login and follow the instructions to take the exam. **The proctor must observe the students destroy their scratch paper and must watch them close the exam in Canvas. Logging out of ProctorU before closing the exam in Canvas can potentially nullify the exam score and result in an exam score of 0.**

**Academic Integrity:** BMS 300 adheres to the CSU Academic Integrity Policy as found in the General Catalog (<http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/#academic-integrity>) and the Student Conduct Code (<https://resolutioncenter.colostate.edu/student-conduct/code/>). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

Printing, copying or possessing a copy of an exam without the author's consent will be considered a violation of the University's academic integrity policy. Neither calculators nor phones will be allowed out during examinations and having a phone out during an exam will be considered a violation of the University academic integrity policy. Students IDs will be checked for each exam so please be prepared to show picture identification at the time of the exam.

**Make-up Examinations:** In a case where an examination has been missed or where the final exam score is higher than one of the unit exams, the final exam will substitute for that unit exam and will count twice. Only one such substitution may be made. Any student who misses more than one examination must present evidence in a timely manner to the coordinator and show that all absences were for reasons that meet the University criteria for excused absences. **IN MOST CASES (EXCEPT FOR CLEAR EMERGENCIES), ARRANGEMENTS MUST BE MADE PRIOR TO THE SCHEDULED EXAMINATION.** For such cases, a mutually acceptable arrangement will be sought for make-up examinations. Unexcused absence from a second missed examination will result in a zero score.

**Total Points:** The combined total points for the course will be 500, 100 for each exam. (See below for method of calculating grades.) You must take the final examination to complete the course and the final examination will be used in computing your course grade. In cases where your final examination score is higher than a unit examination score, the score on the final will substitute for your lowest unit examination score. If your lowest score is on the final, this score will be counted once and added to the scores on the four unit exams. Grades are based on 500 points (see tables below for details).

**Grading:** Your course grade will be based on your performance in the unit examinations and on the final examination. Grades will be based on the following percentages:

- A = 90% and higher
- B = 80 to 89%
- C = 70 to 79%
- D = 60 to 69%
- F = 59% and below

If the class mean falls below the C range, the coordinator may shift the break points downward. Under no circumstances will the break points be shifted upward. Extra credit points from the e-book quizzes and tutorial attendance will be added to your point totals after the grade breaks are established at the end of the semester.

Examples of grade Calculation	
Example #1	Example #2
T #1 = 86	T #1 = <del>86</del> 92
T #2 = 88	T #2 = 88
T #3 = 92	T #3 = 92
T #3 = 92	T #4 = 94
Final = 80 (Final is lowest score)	Final = 92 (Final is higher than lowest score)
<b>Grade avg. = 88</b> <b>Course grade = B</b>	<b>Grade avg. = 92</b> <b>Course grade = A</b>

**Audits:** Anyone taking the course for formal audit credit must take the examinations or demonstrate by some other means that he/she is participating in the course in order to obtain a satisfactory audit grade.

**Completing an Incomplete Grade:** If you are completing an Incomplete grade (I), please contact the course coordinator so that your name can be added to the roster of students in Canvas. If you are completing the course, but are not registered for attending the university, please contact the course coordinator.

**Special Needs:** If you have special needs which will assist this learning experience and which we may be able to accommodate, please feel free to contact Dr. Walrond.

BMS 300 Lecture and Exam Schedule, Spring 2019			
Date	Day	Topic	Lecturer
<b>Jan. 23</b>	W	Introduction/Cells	Dr. Walrond
24	R	Cells	Walrond
25	F	Cells	Walrond
28	M	Cells	Walrond
30	W	Cells	Walrond
31	R	Cells	Walrond
<b>Feb. 1</b>	F	Cells	Walrond
4	M	Cells	Walrond
6	W	Epithelia and other Tissues	Walrond
7	R	Skin	Walrond
8	F	Skeletal System	Walrond
11	M	Skelatal System	Walrond
13	W	Endocrine System	Walrond
14	R	Endocrine System	Walrond
15	F	Endocrine System	Walrond
18	M	Endocrine System	Walrond
<b>20</b>	<b>W</b>	<b>Exam 1 (Cells through endocrine)</b>	
20	W	Nervous System	Walrond
21	R	Nervous System	Walrond
22	F	Nervous System	Walrond

25	M	Nervous System	Walrond
27	W	Nervous System	Walrond
28	R	Nervous System	Walrond
<b>Mar. 1</b>	F	Nervous System	Walrond
4	M	Nervous System	Walrond
6	W	Muscle System	Walrond
7	R	Muscle System	Walrond
8	F	Muscle System	Walrond
11	M	Muscle System	Walrond
<b>13</b>	<b>W</b>	<b>Exam 2 (Nerve and Muscle)</b>	
13	W	Cardiovascular	Walrond
14	R	Cardiovascular	Walrond
15	F	Cardiovascular	Walrond
		<b>March 16-24: Spring Break</b>	
25	M	Cardiovascular	Walrond
27	W	Blood	Walrond
28	R	Lymphatics	Walrond
29	F	Lymphatics	Walrond
<b>Apr. 1</b>	M	Lymphatics	Walrond
3	W	Immune System	Walrond
4	R	Immune System	Walrond
5	F	Immune System	Walrond
8	M	Immune System	Walrond
<b>10</b>	<b>W</b>	<b>Exam 3 (Cardiovascular, Blood, Immune)</b>	
10	W	Respiratory System	Walrond
11	R	Respiratory System	Walrond
12	F	Respiratory System	Walrond
15	M	Renal System	Walrond
17	W	Renal System	Walrond
18	R	Renal System	Walrond
19	F	Renal System	Walrond
22	M	Digestion & Metabolism	Walrond
24	W	Digestion & Metabolism	Walrond
25	R	Digestion & Metabolism	Walrond
26	F	Digestion & Metabolism	Walrond
29	M	Digestion & Metabolism	Walrond
<b>May 1</b>	<b>W</b>	<b>Exam 4 (Respiration, Renal, &amp; Digestion)</b>	
1	W	Reproductive System	Dr. Bouma
2	R	Reproductive System	Bouma
3	F	Reproductive System	Bouma
6	M	Reproductive System	Bouma
8	W	Reproductive System	Bouma

9	R	Reproductive System	Bouma
10	F	Reproductive System	Bouma
<b>May 13-17 Finals Week</b>		<b>The final exam will open at 6:30 pm on Monday, May 13, and close at 6:00 pm Mountain Time on Thursday, May 16.</b>	

**NOTE IMPORTANT: "W" drop period ends Monday, March 25th.**

<b>The Distribution of Questions on the Final</b>	
<b>TOPIC</b>	<b># OF QUESTIONS</b>
Cells	6
Tissues/Skin	4
Skeletal	2
Muscular	4
Nervous System	11
Endocrine	3
Cardiovascular	6
Blood, Immune & Lymphatic	6
Respiration	4
Urinary	4
Digestion	7
Reproduction	23
<b>TOTAL</b>	<b>80 QUESTIONS</b>